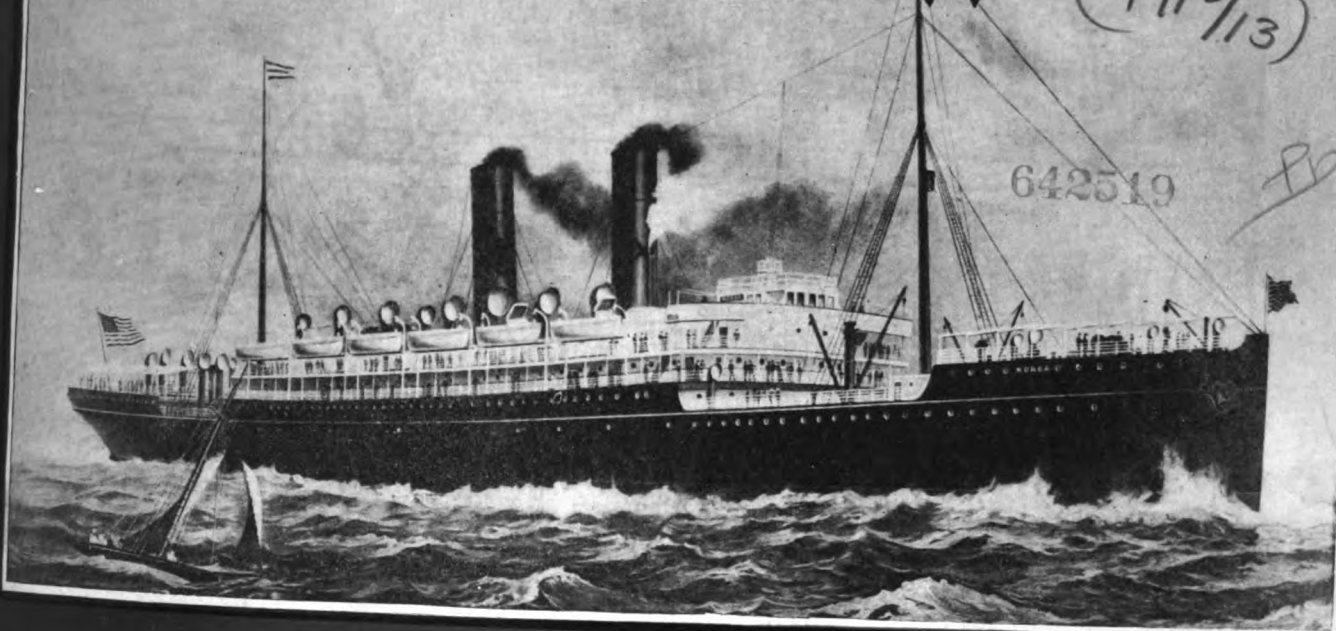


# PACIFIC MARINE REVIEW

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Special Rate to Shipmasters, Marine Engineers and Licensed Officers, \$2.00.

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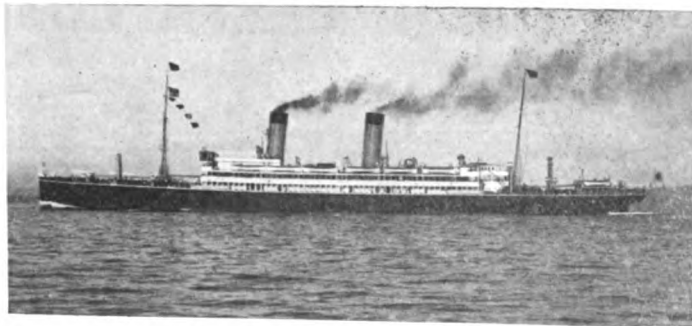
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## Seattle's Proposed Port Improvements With Pacific Marine Review's Suggestions

The provision for future developments in the most modern facilities for expeditious and economical docking, discharging and loading of ocean vessels is naturally the very immediate and urgent commercial necessity for the Port of Seattle.

In recognition of this fact, we take particular pleasure in congratulating the Port Commission for the able manner in which the selection of suitable locations for the improved dock projects have been made. The whole matter has been well considered, not only with reference to the ground available, but also in relation to the sites, their proximity to the main lines of railways, switching facilities, accessibility by teams and street car service, availability for existing business and manufacturing establishments and the encouragement of new industries at this port.

Three dock locations have been decided upon by the Commission, one at Smith's Cove, Central Waterfront and the third at East Waterway. Other projects are also under consideration, regarding which, however, no definite action has as yet been taken; these to consist of a sheltered harbor for the mosquito fleet at the foot of Harrison Street and the powder dock at some suitable place, where the handling of dangerous explosives can be carried on with maximum safety.

It is proposed to acquire a strip of land, 5,200 feet long at Smith's Cove, about half its length, to be 400 feet in width and the remainder of diminished width. Portions of this Dock will be dredged to a sufficient depth to admit the largest ocean-going vessels on its outer end, the other part to be deepened as business of the dock from time to time warrants. It is intended to equip this dock with the most modern machinery for quickly and economically handling cargoes (this also applies to the dock at East Waterway), and at either of these docks, or very probably both, grain elevators will be erected and cold-storage plants installed for the preservation of fresh fish, fruit and other perishable commodities. At Smith's Cove, where the ground is comparatively cheap, and far enough removed from other business to minimize the risk of fire, a general lumber storage yard and dock is to be provided, on which any mill, large or small, including those located inland, can store their lumber while awaiting shipment. At the present time, only the mills on tide water can take advantage of the lower ocean rates, while the interior mills are limited to rail shipments and are thus constrained to sell their product at comparatively lower prices. It is, therefore, planned to provide at Smith's Cove facilities which will enable the mills of the interior to accumulate their output so as to form full cargoes to attract large vessels, which may load at this point without leaving to go elsewhere for completion.

With the cheaper rates which naturally are expected with the opening of the Panama Canal, and the many new markets for Washington lumber, which will then become available, it is justly to be expected that facilities of this character will form an immense stimulus to the lumber industry for the promotion of trade and prosperity of the entire State.

The central dock will have 750 feet of waterfront, extending from the foot of University to Madison Street, which is now occupied by Piers 3, 4 and 5. While a portion of this dock will be reserved for a ferry landing,

it is intended that its greatest utility will be to provide a landing for the Sound fleet and modern sized ocean steamers. Though mainly intended for a passenger dock, it will handle a good deal of package freight and produce for wholesale houses. In this connection, Pacific Marine Review cannot sit idly by without at least offering its suggestions, which we trust may appeal not only to our Port Commission, but to the public in general and in particular to men interested in port developments who have traveled extensively and seen some of the foremost ports of the old world, from which we still can learn.

In view of the doubly expected increase of influx of people to this State in the near future, with Seattle as its foremost City and port, the ever-necessary increase of improved facilities in water transportation to and from the many fast-growing smaller towns, townsites and villages, located on the shores of Puget Sound and its adjacent waters, is indeed imperative. To operate large fleets of inland navigation steamers successfully, with the least possible loss of time, and to offer the traveling public the best accommodations for embarking and disembarking, it is naturally of the highest importance to construct not only a first-class passenger depot in connection with steamship services, but in the writer's opinion, on somewhat different lines than landing at docks. With low tides, often difficulties are experienced by touching fender piles with the light and comparatively high upper-structure of our Sound steamers, notwithstanding protruding guards, with which these low hulls of Sound steamers are provided, nevertheless, often causing damage to the upperstructure of these respective vessels making landings with all due caution. A landing such as we herewith suggest would necessitate hardly any maneuvering, no backing and filling, would be adequate in every respect for decades to come and from which any steamer large or small on its up-Sound course or along the waterfront can proceed to or from without any loss of time and under all weather conditions.

A rough outline of what we deem an essential adjunct to the proposed Port-Improvements of the Port of Seattle, "A FLOATING LANDING STAGE" is given herewith:

For this purpose we propose the construction of a seawall 1,500 feet long, to which should be moored and securely anchored a landing stage 1,000 feet long with the proportioned required width. From this stage, three approaches consisting of large wide staircases, and the necessary slips for the conveyance of baggage, etc., leading to the mainland should be provided, the stage to be partly covered in order to protect passengers under all weather conditions and to provide facilities for the examination of baggage, with the intention to induce every steamship company's steamers employed in carrying mail and passengers to use the floating landing stage, and passengers. The Pacific Coast Steamship Company, the Great Northern Steamship Company, the Nippon Yusen Kaisha, the Osaka Shosen Kaisha, the Blue Funnel Line, the Alaska Steamship Company, the Alaska-Pacific Steamship Company, our Sound fleets with or without small freight shipments, and others could come to such terminal for embarking and disembarking mail, passengers and baggage only, on similar principles adopted for years past at Liverpool with such steamers as the Lusitania and Mauretania and all other Trans-Atlantic Liners trad-

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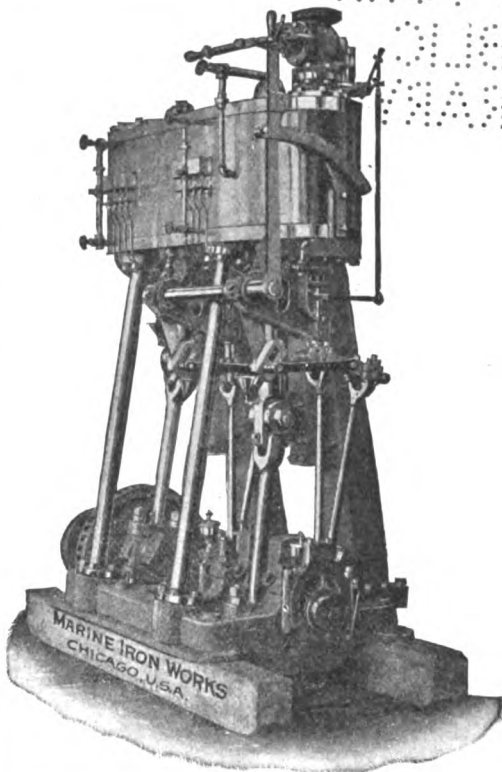
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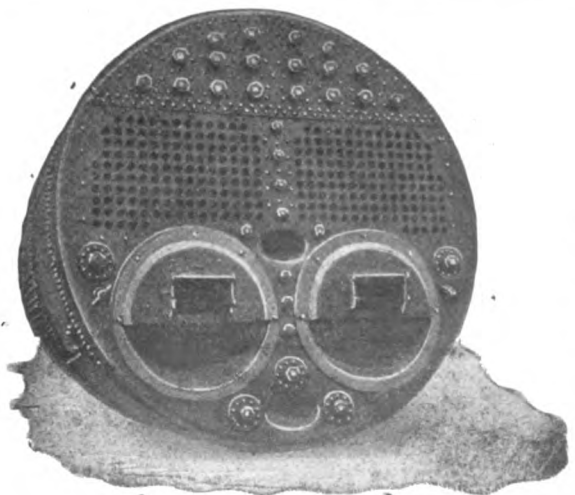
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ing there, including all steamers employed in the passenger coasting trade, as well as those on the Mersey, including ferries.

In connection with this stage, a suitable and substantial depot should be constructed ashore, the lower floor of which would contain the ticket and baggage office of the respective companies interested, the United States Custom House and Immigration Offices, telegraph and telephone stations, inquiry bureaus and all such other offices as it may become necessary to establish. The upper floor, which should be reached by elevator service, besides the required large staircases, would consist of well-fitted waiting-rooms, commanding a fine view of the Sound, combined with all the necessary comforts in connection with an over-head steel structural bridge, crossing Railroad Avenue, leading directly to car lines and such vehicles for the conveyance of passengers to their respective destinations in town. Both Hamburg, as well as Antwerp, are provided with smaller landing stages for river passenger traffic."

The East Waterway Dock will occupy a tract of Seattle tidelands 450 feet wide, varying in length from 510 feet on the North Side to 428 feet on its South mark. This dock is intended for the berthing of coasting vessels and on account of the ample area, at the same time accommodation will be provided for berthing several large Ocean steamers. A complete switching system will be installed and it is intended to construct several suitable warehouses on this location, equipped with most modern machinery for handling all kinds of freight cheaply and expeditiously and could be safely approached at any time notwithstanding the state of wind and weather.

The proposed Duwamish Dock provided for by the County Commissioners, located on the Duwamish waterway, 850 feet south of the South end of the West Waterway, the latter of which is at present undergoing operation for dredging to a depth of 26 feet at extreme low tide and 40 feet at high tide, to a point 850 feet north of the dock site; the Duwamish waterway is to be dredged past the dock site to a width of 300 feet and a depth of 23 feet, at mean low tide and 30 feet at mean high tide.

To make the dock accessible at any time to any vessel that can pass through the Panama Canal, all that would be necessary is to deepen the waterway to the dock by 14 feet. According to the estimate of a competent engineer, this work would require the removal of 900,000 cubic yards of earth. In order to allow a large vessel to turn without difficulty, a turning basin over 100 acres in extent will be constructed at the South of the docksite.

We sincerely trust that all the proposed improvements will have been carried out and completed prior to the opening of the Panama Canal on July 1st, 1913. If so, this port will be in a position to offer facilities for the accommodation of the large increase in ocean commerce, which as we all know will accrue on the entire Pacific Coast, and as one of Seattle's foremost citizens rightly remarked in a letter addressed to the Seattle Times: "We must quicken our pace and bring to the performance of this pressing task all the judgment, experience and foresight at our command."

Before concluding this brief outline of the proposed improvements with our suggestions, we consider it our duty to protest against the dumping of earth from regrades into this magnificent harbor. It is well known that several million cubic yards of earth were sluiced during the Denny Hill regrade to the waterfront into Elliott Bay, with the intention of having a fill made at different places where the depth was 90 feet and above. As a result, however, this earth has silted due to the action of tides to

such an extent that the approach to some of the north piers has been seriously affected and in fact altered the depth to such a degree that only a few months ago one of the Blue Funnel Liners grounded in attempting to make her berth. Is it not possible to stop such a reprehensible practice? The Port Commission should take note and act accordingly! Other ports of importance have a heavy fine levied on any ship which undertakes to dump a bucket of ashes or refuse over the side into the harbor and generally the Harbor Police are particularly instructed to keep a close watch to prevent the offense of established harbor regulations.

Seattle has been behind the times in this respect and there is certainly urgent need for reform and improvement in this and many other directions.

#### SAN FRANCISCO'S HARBOR IMPROVEMENTS.

On January 11th, 1912, the Board of State Harbor Commissioners received bids and will in the near future award a contract for the construction of Pier No. 17, at the foot of Union Street. Immediately thereafter it will proceed with the work of construction on four new piers at the section of seawall between Harrison and Brannan Streets.

It is also proposed to extend the Belt Railroad across the foot of Market Street, thus connecting the road now operating on the north and south sides. This will give the state a railroad from the southerly line of the United States Military Reservation (The Presidio) to the vicinity of Piers No. 42 and No. 44.

Plans will be prepared very soon for the construction of additions to the present Ferry Building, one to the north and one to the south. These additions will each be 150 feet wide and 300 feet long, and will provide from four to six more ferry slips for the accommodation of increasing trans-bay ferry traffic.

About 1,100 feet of seawall will be built from the south end of Section 8 to the foot of Harrison Street. This will close up the gap between the Ferry Building and the Channel. The completion of this seawall will restore to the state a 200-foot right of way along the China Basin.

#### PORT IMPROVEMENTS OF VICTORIA, B. C.

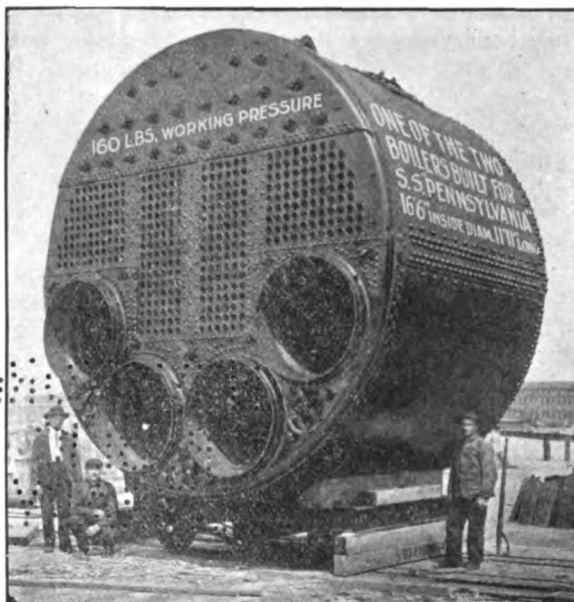
Plans for extensive harbour improvements of this port are now before the Minister of Public Works, comprising both the inner as well as the outer harbour.

In relation to the former, the whole area is to be deepened and all obstructions to be removed which have so far been of a particular menace to the fine fleet of the British Columbia Coast Service of the Canadian Pacific Railway, which for years past has made this harbour its home port.

Many a traveler on these fine vessels has, with interest and amazement, watched the close manoeuvring of these ships leaving Victoria, necessitating a full turn in dangerously close quarters, requiring considerable skill on behalf of the master and a natural loss of time to the owners.

In relation to the outer harbour, still more extensive improvements are planned. In the continuously increasing over-sea trade, to and from Victoria, the outer harbour has become inadequate in many respects and in view of further trade expansion, larger and better facilities for quick dispatch of Ocean liners, which in greater number will in the future make Victoria a port of call, necessitate re-construction on an extensive scale. For this purpose it is intended to build two breakwaters enclosing a large area, with the construction of piers and warehouses, in connection with railroad facilities, all of the latest



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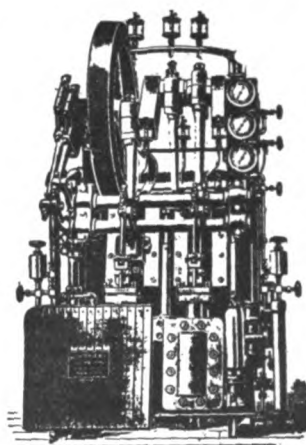
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and most modern type, to berth at one-time as many as twenty or more Ocean steamers of different size without any difficulty. In this connection, the project of the building of a one-thousand-feet-long, hundred-feet-wide and thirty-four-feet-deep dry-dock at Esquimalt, financed by the owners of the British Columbia Marine Railway Company and their construction of an improved and modern ship-building plant is particularly worthy of mention.

#### PORT IMPROVEMENTS AT LOS ANGELES, CAL.

The city administration of Los Angeles, at a special meeting, has taken decisive steps toward hurrying the

work on the improvement of the Los Angeles harbor. The members of the harbor commission, the members of the board of public works, City Engineer, Harbor Engineer, City Attorney and Special Counsel and the members of the harbor commission were instructed to prepare at once comprehensive plans for the improvement of the inner and outer harbors, particularly that portion of the water front known as the Huntington fill, which is controlled by the city. The harbor commission is to have charge of the improvements and the plans will be prepared immediately by City and Harbor Engineers. The work will be pushed as fast as possible. At the meeting tentative plans were taken up and may be adopted by which the harbor bonds may be sold by popular subscription.

## Shipping in Sixty-Second Congress, Second Session

Congressman William Sulzer, of New York, chairman of the Committee of Foreign Affairs, whose name has been so intimately and effectively connected for years past with the staunch advocacy for the encouragement of the American Merchant Marine and American commerce on the high seas has for this purpose on December 4th, 1911, introduced a bill in the House of Representatives which is reproduced herewith.

Pacific Marine Review has repeatedly in previous issues expressed its views on this important and vital subject, so imperative for future development of our country on the oceans, and it is hardly necessary to again repeat that we naturally and most vigorously endorse Mr. Sulzer's views, trusting that every member of the House and the Senate will forcibly assist in the passage of a bill which is indeed favorably regarded by Senators and Congressmen from this and many other states. We are assured that Senator Miles Polindexter and Congressman Humphrey are glad to support the Sulzer Bill, if it can be reported, which we trust it will. In precision and consistency, this bill, in the possible passage of which we are convinced Mr. Sulzer will relax no effort and ability, shows the approaching of sunrise on the horizon for the upbuilding of our Merchant Marine before this session of Congress adjourns and we again earnestly urge the support of all those interested in the gaining of a victory in the battle royal so long fought in obscurity.—Ed. Note.

**A bill to encourage the American merchant marine and American commerce, and for other purposes.**

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that a reduction of five per centum ad valorem of the customs duties now or hereafter imposed by law shall be allowed on all goods, wares, or merchandise imported into the United States in vessels of the United States; and in cases where no customs duties are imposed by law on goods, wares, and merchandise imported into the United States there shall be levied, collected, and paid a duty of two per centum ad valorem if such goods, wares, or merchandise are imported in vessels not of the United States. The said reduction of five per centum in duty herein provided for shall not apply to goods, wares and merchandise not of the growth, production, or manufacture of countries contiguous to or bordering upon the territory of the United States, when imported into the United States by land transportation or land vehicles or conveyances through or from ports or other places of countries bordering upon the United States, if the same shall have been brought to such ports in vessels not of the United States; in cases where no customs duties are imposed by law on such goods, wares

and merchandise so imported, a duty of two per centum ad valorem shall be levied, collected and paid. Said reduction of five per centum in duty shall not apply in cases where goods, wares, or merchandise are transhipped or transferred from a foreign vessel, port or place to a vessel of the United States for the purpose of evading the provisions of this act, and in such cases no exemption from duty shall be granted.

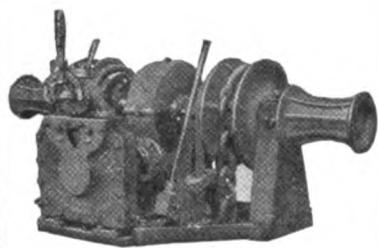
Sec. 2. That the master, agent or owner of any registered vessels of the United States shall be exempt from the tax of four dollars for every alien entering the United States on such vessel prescribed by section one of the Act of February twentieth, nineteen hundred and seven, entitled "An act to regulate the immigration of aliens into the United States."

Sec. 3. That the President shall have power, and it shall be his duty, to give notice, within ten days after the passage of this act, to all foreign countries with which commercial agreements have been entered into making any provision or provisions which are in conflict with sections one or two of this act of the intention of the United States to terminate such agreement at a time specified in said notice, which time shall in no case be longer than the period of time specified in such agreements, respectively, for notice for their termination: Provided, That until the expiration of the period when the notice of intention to terminate hereinbefore provided for shall have become effective, or until such date prior thereto as the high contracting parties may by mutual consent select, the terms of said commercial agreement shall remain in force.

Sec. 4. That all acts and parts of acts in conflict with the provisions of this act are hereby repealed, and that, except as provided in the first and second sections hereof, this act shall take effect and be in force from and after its passage.

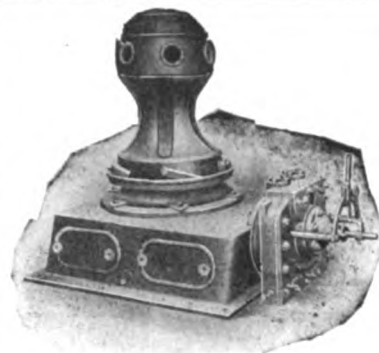
#### PROPOSED CANAL LEGISLATION.

Two bills were introduced in the House of Representatives on December 5, last by Mr. Knowland of California. The first provides for the payment of tolls and transit charges on vessels owned by the United States and merchant vessels of the United States engaged in the "coastwise" trade passing through the Panama Canal. There is a proviso that the act shall not apply to vessels in the "coastwise" trade owned in whole or in part by any railroad company, and that the ships favored by the act may be used by the Government at any time as auxiliaries to the Army and Navy, upon payment of the value at the time they are taken.



## DAKE

Steam Deck Capstans  
 Steam Anchor Windlasses  
 Pilot House Steam Steering  
 Gears (single and double hand  
 wheel)  
 Hoisting Engines  
 Stationary Engines, and  
 Engines for Direct Attachment



WRITE FOR CATALOG AND PRICES

**DAKE ENGINE CO.**

Grand Haven, Mich.

# Automatic Acetylene Gas Buoys

## Beacons and Other Aids to Navigation

These buoys are in reality floating lighthouses. The candlepower of their lights range from 140 to 1,060, according to the size of the lantern used.

They generate their own gas under low pressure, therefore no generating or compression plants on shore are necessary. With one full carbide they operate continuously for from six months to a year.

**THE LARGER TYPE BUOYS ARE THE EQUAL OF LIGHTSHIPS**

Manufactured by

**THE INTERNATIONAL MARINE SIGNAL COMPANY, Ltd.**

OTTAWA, CANADA

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G. F. BARRITT

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BOILER REPAIRS TO STEAMERS ANYWHERE ON PUGET SOUND BY

**FLOATING ELECTRIC WELDING EQUIPMENT**

U. S. Patents

36 West Connecticut St.

SEATTLE, WASH.

WHEN WRITING TO ADVERTISERS, PLEASE MENTION THE PACIFIC MARINE REVIEW



The second bill provides for the operation of the Canal. The President is given power to provide for the operation of the Canal, fix charges for its use of not over \$1.50 nor less than 50 cents per registered ton, American measurement, excepting vessels of the United States and its citizens and vessels of the Republic of Panama, and excepting also that the President may charge the highest rate to vessels engaged in the "coastwise" trade of the United States owned in whole or in part by a railroad company. Vessels accepting free tolls are to be at the disposal of the Government upon payment of actual value at the time of taking. The President is further authorized to establish, maintain and operate dry docks, repair shops, yards, docks, wharves, warehouses, and store-houses.

On December 6, Mr. Roberts of Nevada introduced a bill in the House of Representatives designed to prevent interstate railroads from owning or controlling ships or vessels engaged in trade or commerce through the Canal. It provides that no ship or vessels owned or controlled by any railroad company or corporation engaged in interstate commerce shall be permitted to engage in trade or commerce through the Canal, and provides a fine of not over ten thousand dollars nor less than one thousand, or imprisonment for not more than twelve months nor less than one month for any officer of such a company who knowingly violates or permits the violation of the law.

On December 11, Mr. Lodge of Massachusetts introduced into the Senate a bill providing that all tolls and transit charges which may be imposed upon public vessels or merchant vessels of the United States for passing through the Canal shall be paid from the United States treasury.

#### POSSIBLE RESULTS OF NEW PROPOSAL FOR MAIL CONTRACT.

With the requirement by the Postmaster-General during December, 1911, of new bids for the transportation of United States Mail, from the Atlantic to Pacific Coast ports, via the Panama Canal, it is his purpose to obtain, if possible, several bids from Steamship Companies, in accordance with the idea of the Government, this resulting from the dissatisfaction with the one bid received on the last proposal, primarily because it modified the proposition of the Government.

With the new proposal, bidders are afforded at least six months in which to formulate their bids, which will not be decided upon before July 1st, 1912, one year at least before the opening of the Panama Canal.

In this connection, it is of particular interest to Pacific Marine Review to hear of the International Mercantile Marine Company, owners of the fine passenger and freight steamers "Kroonland" and "Finland," which Company will no doubt submit a bid to the Government for carrying these mails.

The writer has served close on to seventeen long, but indeed pleasant, years in different vessels of the American and Red Star Lines, which are owned and managed by the International Mercantile Marine Company. In the school of this exemplary large and "par excellence" managed Company, he received his steamship training and therefore is intrinsically familiar with the greater number of vessels comprising the fleet of the American and Red Star Lines, of which none are better known to him than the "Kroonland" and "Finland."

"Know Your Own Ship," as Thomas Walton, a Naval Architect of repute, appropriately and effectively entitled

his splendid work. A ship's sea qualities are taught by process of learning and experience, but her construction requires knowledge obtained through somewhat extensive study, in particular of ships of large and modern types.

These fine and able vessels are constructed on similar and somewhat improved lines to their English built sisters, "Vaderland" and "Zeeland," all of which were designed by Mr. J. V. Paterson, formerly Naval Architect of the International Navigation Company, who is now President and General Manager of the Seattle Construction and Dry Dock Company of Seattle.

During the construction of the former, the writer had the pleasure of working under Mr. J. V. Paterson in the equipment of both vessels at Cramps Ship Building Yard in Philadelphia, as executive officer of the S. S. "Kroonland," making, after the vessel's completion, three round voyages, again returning to Cramp's for similar work on the sister-ship S. S. "Finland," on which he served in the same capacity until his return to the American Line's U. S. M. S. S. "St. Paul" and "St. Louis" respectively.

S. S. "Kroonland" and "Finland" are not only fine appearing, twin-screw vessels, built in 1902, under Lloyds highest class of 12,760 tons gross, 560 feet long, 60.2 beam and 38.4 depth with a promenade deck 273 feet long, four pole masts and two stacks, but of large cargo carrying capacity, with modern appliances for handling cargoes of all kind, and splendid passenger accommodation, consisting of first, second and third class, modern in every respect.

On the trial trips over the measured mile, S. S. "Finland" exceeded her sister-ship by over a half-knot, steaming practically 17 knots, while up to the writer's leaving the Trans-Atlantic service, the "Kroonland" still held the record for average speed on the Westbound trip of 16.27 knots, which indeed is a splendid performance for a vessel which was built to acquire 16 knots trial speed, and a credit to the designer and builder.

There is not a question of a doubt that if the International Mercantile Marine Company is awarded this mail contract through the Panama Canal, it will be an easy task for these two fine sister-ships not only to keep but exceed this speed on waters less boisterous than the so termed "Western Ocean."

In relation to the change of flags, these vessels flew the Stars and Stripes for several years, until the management decided to convey them to the Belgian flag, to curtail operating expenses, which are naturally considerably less under foreign flag as the case proved with their foreign sisters "Vaderland" and "Zeeland."

It is indeed significant to see these splendid ships back under the American flag to which they are a credit in every way.

#### WITHDRAWAL OF "AUSTRALIAN MAIL LINE."

Following the withdrawal of the Weir Steamship Line from San Francisco to New Zealand and Australia, leaving the San Francisco field free to the Union Company of New Zealand, Messrs. Frank Waterhouse & Co., Inc., of this city, have inaugurated a new line of monthly steamers from Vancouver and Seattle, to Sydney direct, and have already secured the "Henrik Ibsen" and "Strathairn" to operate in the trade. Three other steamers will be required. Messrs. Waterhouse will use lumber as a tonnage basis, filling up with local general and overland cargo, in connection with the C. M. & P. S. and C. P. Railroads.

# Homeward Conference In Trans-Pacific Trade

## Communication From Representative Humphrey

We have received the subjoined communication from Representative Humphrey, with reference to the discussion herein by Mr. H. B. Jayne, which we published with editorial comment in October last. Mr. Jayne, to whom we submitted the communication received from Mr. Humphrey, remarks:

"I have read this communication with interest and in justice to Mr. Humphrey, we must remember that he represents the interests of United States citizens at large, as well as steamship owners and merchants.

"For that reason I have always had the greatest respect for Mr. Humphrey, as it would seem, particularly in the past, that an undue proportion of members of the House of Representatives and the United States Senate have represented 'special interests,' almost becoming 'private agents,' more than representing 'public interests' and remaining public representatives.

"Nevertheless I still believe that the 10 per cent. rebate allowed to regular and large merchants, is a fair compromise as between the interests of steamship owners and merchants on the one hand requiring large expenditures to provide transportation facilities in advance of commerce, on the other hand requiring such transportation facilities in advance of commerce to create and secure such commerce."—Ed. Note.

Committee on Rivers and Harbors,  
House of Representatives,  
Washington, D. C.  
Seattle, November 10-11.

Capt. E. Francke,  
Pacific Marine Review,  
Arcade Annex,  
Seattle, Wash.

My Dear Capt. Francke:—

As I have always received the most courteous and considerate treatment from your publication, as well as from Mr. Jayne personally, it is a matter of very great regret that I have not been able to find time to write a reply in answer to your invitation to the defense made by Mr. Jayne of the rebate system practiced by the shipping combines engaged in over-seas trade. I hardly think, however, that it is necessary to advocate something in its place before condemning it. The American people have long since determined that the rebate system is wholly wrong and one of the most infamous methods used by great business concerns to produce monopoly and all the countless evils that follow it.

Instead of the rebate system, I advocate competition. I want competition on the ocean just as we are trying to produce it on the land. There is no more reason why the American people should permit a monopoly by steamships than there is that they should permit a monopoly on the railroads. Neither one should be permitted to destroy competition by the rebate system.

I trust before another session of Congress has ended to see a law upon the statute books that will give the Government a complete and drastic remedy to reach all ships, foreign or domestic, that belong to these combines. It is not necessary to point out specifically the evils of the secret rebate system. It is the most powerful weapon ever invented by either railroads or steamships to destroy competition and to permit unjust and exorbitant rates.

We see it strikingly illustrated today between here and South America, where the freight rates are the highest in the world, service considered, being practically equal to the rate charged from the United States to Europe and from Europe to South America, although the distance is almost double that between here and South America. So complete a monopoly is this South America combine, maintained by the weapon of the rebate, that last year more than one-fourth of the vessels coming from South America to the United States came in ballast because the combine prevented these ships from securing a cargo at any price.

The American people cannot look with patience upon such a situation. I am just in receipt of a letter from a New York firm, informing me that this South American combine had, without notice, increased the rate on their goods from 8 to 30 cents per hundred pounds.

Mr. Jayne takes exception to the statement made in reference to these combines that they levy "a tribute upon the whole American people, a tribute far in excess of any legitimate service performed." I think that this statement is fully justified and demonstrated by what I have already said about the South American combine and it is also demonstrated by the record of the Hamburg-American Company. This Company acknowledges a profit of 10 per cent annually on a capitalization of \$96,000,000. I had the opportunity, not a great while ago, of examining the annual report of this company and no one can study that report without being convinced that the profit is more than 25 per cent annually. Is this a reasonable profit? Is not such an enormous profit on such a large amount of capital "a tribute in excess of any legitimate service performed?"

However, as I have said, I deem it unnecessary to point out the evils of the rebate system. It has been universally condemned at the bar of public opinion in this country and my remedy and my purpose is to destroy it and substitute competition.

Again thanking you for the courtesy of an opportunity to reply to Mr. Jayne's statement, I am,

Sincerely yours,  
(Signed) W. E. HUMPHREY.

### CANADA-AUSTRALIA MAIL SERVICE.

The question of subsidizing, by the Australian Commonwealth, of a trans-Pacific steamship service has again been revived with the object of effecting an arrangement for an improved service. When the new contract was made by New Zealand with Canada, instead of with Australia and Canada in combination, the official terminal port for the steamers was transferred to New Zealand. The steamers will continue the trip to Sydney, but as far as the Postal Department is concerned the only payment made by the Commonwealth for mails is on a poundage basis. This amounts approximately to \$10,900 a year. The new proposal is that the Commonwealth should pay the company a subsidy of between \$97,330 and \$145,995 a year, with \$48,665 additional for steamers to call alternately at Brisbane and Melbourne. In return, the company is prepared to provide an improved and more expeditious service.

REPORT OF NEW CONSTRUCTION, YEAR 1911, STEEL SHIPS.

Although the files of Pacific Marine Review for the year 1911 include a complete and current record of construction for the past year, for the convenience of our subscribers we have compiled in tabulated form our customary report of new construction at the principal steel shipbuilding yards in the United States for the year 1911. We thank all concerned for their hearty co-operation.

In each case, where reported, we subjoin answers to the following specific interrogations:

- A. Do you consider the prospect encouraging for 1912?
- B. Have labor difficulties embarrassed you particularly during the past year?
- C. Have you experienced special difficulties in securing materials?
- D. Does the year closed, in your judgment, mark any special line of progress and improvement in steel shipbuilding, either in designing and class of vessels, in material or in shipbuilding tools?
- E. What average number of men have you employed during the year, and what is your average weekly or monthly wage expenditure?

SHIPBUILDERS: UNION IRON WORKS, SAN FRANCISCO, CALIFORNIA.

Builder's No. ....	Name of Vessel..	Gross Tons.....	Speed Knots....	Engines, Recipro- cating or Tur- bine .....	I. H. P. ....	Type and Class of Vessel, No. of Decks, Etc.....	Owners	Trade	Report of Pro- gress.
98 "Kilauea"		1338.78	15 1/4	Reciprocating	2600	Pass. & Ft., Sin. Sc., 4 Dks.	Inter-Island Navigation Co.	Pac. Islands	Comp. Nov., 1911
94 "Carp," Sub-marine							U. S. Government		Completed
95 "Parracuda," Sub-mar.							U. S. Government		Completed
99 "Sea Wolf," Sub-mar.							U. S. Government		50% completed
100 "Natilus," Sub-marine							U. S. Government		50% completed
Not named, Sub-mar.									Not started
Not named, Sub-mar.									Not started
101 "Orca," Sub-marine									Work commenced
Manitowoc Shipbuilding Company, Manitowoc, Wisconsin.									
42						8-car Float			
43						750-cu. yd. Dump Scow			
44 "Commerce"		280	12	Double H. P. 17-17	350		Chicago Junction Ry., Chicago Great Lakes D. & D. Co., Chicago	Chicago Riv.	Delivered
				16 Recip.		Harbor Lighter, 2 decks	Merchants' Lighterage Co., Chgo.	Package Light'g.	Delivered
45 Steel floating dry dock ourselves						2 750-yd. Dump Scows	Great Lakes D. & D. Co., Chicago		To be fin. in 1912
47			10	F. & A. Comp. 16x34	350				Delivery 1-20-1912
48						Sound Sucker	Lake Sand Co., Chicago	Carrying Sand to Chicago	Delivery in April, 1912
49				26					
A—No. B—No. C—No. D—No. E—200. \$30,000 per month.									



Maryland Steel Steel Company, Sparrows Point, Md.

Builder's No. ....	Name of Vessel..	Gross Tons. ....	Speed Knots. ....	Engines, Recipro- cating or Tur- bine .....	I. H. P. ....	Type and Class of Vessel, No. of Decks, Etc. ....	Owners	Trade	Report of Prog- ress .....
108 Neptune	City of Baltimore	10774 14	Turbines	Turbines	7000 1 deck	Navy Collier	U. S. Govt., Washington, D. C.	Collier	Completed & Del.
109 City of Baltimore	City of Baltimore	2379 17	Reciprocating	Reciprocating	2750 1 deck	Bay Pass Str	Chesapeake Ship Co., Baltimore.	Bay Stmr.	Completed & Del.
110 City of Norfolk	City of Norfolk	2379 17	Reciprocating	Reciprocating	2750 1 deck	Bay Pass Str	Chesapeake Ship Co., Baltimore.	Bay Stmr.	Completed & Del.
112 Captain Huston	City of Baltimore	664	Reciprocating	Reciprocating	150 1 deck	Suction Dredge	Ellicott Mach. Co., Baltimore	Dredging	Completed & Del.
114 U. S. N. Oil Barge 2	City of Baltimore	422 5	Reciprocating	Reciprocating	150 1 deck	self-prop. Oil Barge	U. S. Govt., Washington, D. C.	Supply	Completed & Del.
115 U. S. N. Oil Barge 3	City of Baltimore	422 5	Reciprocating	Reciprocating	150 1 deck	self-prop. Oil Barge	U. S. Govt., Washington, D. C.	Supply	Completed & Del.
116 Frank Tenney	City of Baltimore	260 10	Reciprocating	Reciprocating	450 1 deck	Tug Boat	Spanish-Amer Iron Co., Phila.	Towing	Completed & Del.
117 U. S. N. Coal Barge 255	City of Baltimore	400	Reciprocating	Reciprocating	1 deck	Steel Coal Barge	U. S. Govt., Washington, D. C.	Supply	Completed & Del.
118 U. S. N. Coal Barge 256	City of Baltimore	400	Reciprocating	Reciprocating	1 deck	Steel Coal Barge	U. S. Govt., Washington, D. C.	Supply	Completed & Del.
119 U. S. N. Coal Barge 257	City of Baltimore	400	Reciprocating	Reciprocating	1 deck	Steel Coal Barge	U. S. Govt., Washington, D. C.	Supply	Completed & Del.
120 U. S. N. Coal Barge 258	City of Baltimore	400	Reciprocating	Reciprocating	1 deck	Steel Coal Barge	U. S. Govt., Washington, D. C.	Supply	Completed & Del.
123 Nelson Z. Graves	City of Baltimore	664	Reciprocating	Reciprocating	1 dk. steel hull, Suc. Dredge		Ellicott Mach. Co., Baltimore	Dredging	Completed & Del.
124 Orion	City of Baltimore	10775 14	Reciprocating	Reciprocating	7000 1 deck	Navy Collier	U. S. Govt., Washington, D. C.	Collier	40% completed
122 Jason	City of Baltimore	10775 14	Reciprocating	Reciprocating	7000 1 deck	Navy Collier	U. S. Govt., Washington, D. C.	Collier	Keel not laid
124 Not named	City of Baltimore	6600 10	Reciprocating	Reciprocating	3000 3 decks	Ocean Ft Ship	Amer-Hawaiian Ship Co., N. Y.	Freight Service	Water bot. comp.
125 Not named	City of Baltimore	6600 10	Reciprocating	Reciprocating	3000 3 decks	Ocean Ft Ship	Amer-Hawaiian Ship Co., N. Y.	Freight Service	Keel not laid
126 Not named	City of Baltimore	6600 10	Reciprocating	Reciprocating	3000 3 decks	Ocean Ft Ship	Amer-Hawaiian Ship Co., N. Y.	Freight Service	Water bot. comp.
127 Not named	City of Baltimore	6600 10	Reciprocating	Reciprocating	3000 3 decks	Ocean Ft Ship	Amer-Hawaiian Ship Co., N. Y.	Freight Service	Keel not laid
128 Not named	City of Baltimore	6600 10	Reciprocating	Reciprocating	3000 3 decks	Ocean Ft Ship	Amer-Hawaiian Ship Co., N. Y.	Freight Service	Keel not laid

Wm. Cramp Ship & Engine Building Company, Philadelphia, Pa.

351 "Submarine G-4"	Oil engines	712 29½	Submarine Torpedo Boat	U. S. Government	59.3%
361 "Beale"	Turbines	2600 21	Torpedo Boat Destroyer	U. S. Government	59.9%
365 "Wyoming"	Turbines	1010 28½	Battleship	U. S. Government	84.0%
383 "Aylwin"	Turbines	1010 29½	Torpedo Boat Destroyer	U. S. Government	2.8%
384 "Parker"	Turbines	1010 29½	Torpedo Boat Destroyer	U. S. Government	2.8%
385 "Benham"	Turbines	1010 29½	Torpedo Boat Destroyer	U. S. Government	2.8%
386 "Bath"	Turbines	1010 29½	Torpedo Boat Destroyer	U. S. Government	2.8%
380 "Cuba"	Reciprocating	2055 18	Cruiser	Cuban Government	80.0%
387 "Patia"	Reciprocating	1200 16	Comb. Sch. Ship & Gunboat	Cuban Government	80.0%
387 Barges for Lehigh Val- ley Railroad				L. V. R. R. R.	
392 Barge for Lehigh Val- ley Railroad				L. V. R. R. R.	

Detroit Shipbuilding Company, Detroit, Mich.

"Pat in Bay"	1182	4-cyl triple exp 3000	Screw Wheel Passenger	Ashley & Dustin Stmr. Line
"City of Detroit, Ill."	6000	Horz Inc 3-cyl 10000	Side Wheel Passenger	Detroit & Cleveland Nav. Co.
Hull No. 188	5000	Quadruple exp 1800	Ser. W. Bulk Cgo Conv. Str.	Calcutta Transp. Co.
Hull No. 189	2000	Triple exp 1000	Bulk Cargo Str.	Geo. Hall Coal Co.

Harlan & Hollingsworth Corporation, Wilmington, Del.

Builders' No. ....	Name of Vessel	Gross Tons ....	Speed Knots. ....	Engines, Reciprocating or Turbine.	I. H. P. ....	Type and Class of Vessel, No. of Decks, Etc.	Owners.	Trade.	Report of Progress.
Vessels completed and delivered during 1911:									
S-1700 "Northland"		2055.75	16½	1 4-cyl. triple expansion	2500	Pass. and Fgt. Str., 2 decks	Norfolk & Wash. St. Bt. Co.	Bay service	Completed 3-18-11.
S-1600 "Benjamin B. Odell"		2011	18	1 triple expansion	2800	Pass. and Fgt. Str., 2 decks	Central Hudson St. Bt. Co.	River service	Completed 4-1-11.
S-1900 "Pure Oil Co. No. 5"		225.75	6	Gas engine	150	Bulk Oil Barge, 1 deck	Pure Oil Co.	Harbor service	Completed 1-25-11.
S-2000 "Car Float No. 10"		852		To be towed		Car Float, 1 deck	Central R. R. Co. of N. J.	N. Y. Harbor service	Completed 1-4-11.
S-2500 "Westfield"		1238	13	1 4-cyl. triple expansion	1450	Fore and aft screw, 2 deck Ferryboat	Central R. R. Co. of N. J.	N. Y. Harbor ferry	Completed 6-3-11.
Vessels under contract but not completed December 31, 1911:									
S-3000 "California"		1580	11	1 triple expansion	1200	Lum. and pass, 1 deck with bridge poop and forecastle	Olson & Malony	Coastwise	To be Cpltd April, 1912.
S-3150 Not named		1900	14	Inclined compound	1400	Side-wheel excursion, 2 decks	Nantucket Beach St. Bt. Co.	Boston Harbor	To be Cpltd Feb., 1912.
S-3175 Not named		1870	10	1 triple expansion	850	Freight steamship, 3 decks	Baltimore & Carolina S.S. Co.	Coastwise	To be Cpltd April, 1912.
S-3360 Not named		1580	11	1 triple expansion	1200	Lum. and pass, 1 deck with poop and forecastle.	Wilson Bros. Co.	Coastwise	To be Cpltd July, 1912.

W. A. Fletcher & Co., Hoboken, N. J.

Builders' No. ....	Name of Vessel	Speed Knots. ....	Engines, Reciprocating or Turbine.	I. H. P. ....	Type and Class of Vessel, No. of Decks, Etc.	Owners.	Trade.	Report of Progress.
209	Rose Standish	14.5	Paddle compound inclined engine	1500	Paddle Excursion	Nantucket Beach St. Bt. Co.	Boston	Building 1912.
210	Niagara	13.	Ferryboat, double compound	1600	Ferryboat	New York Central R. R. Co.	New York	Building 1912.
211	Not named	9.	Beam engine	350	Ferryboat	N. J. Staten Island Fry. Co.	New York	Building 1912.
212	Washington Irving	22.	3-cyl. compound inclined engine	6000	Hudson River Pass. Service	Hudson River Day Line	Hudson River	Building 1912.
213	Not named	19.	Beam engine	450	Ferryboat	Brazil	Rio de Janeiro	Building 1912.
208	Clermont	16.	Beam engine	2000	Paddle, Freight and Pass.	Catskill & N. Y. Trans. Co.	Hudson River	Building 1911.
207	Priemera	9.	Beam engine	450	Ferryboat	Brazil	Rio de Janeiro	Finished 1911.
206	Horicon	20.	Beam engine	1500	Paddle, Pass. Excursion	Lake George St. Bt. Co.	Lake George, N. Y.	Finished 1911.

A—Yes. B—No. C—No.

Seattle Construction & Drydock Co., Seattle, Wash.  
Successors to The Moran Co.

Builders' No.....	Name of Vessel	Gross Tons .....	Speed Knots.....	Engines, Recipro- cating or Tur- bine.	I. H. P.....	Type and Class of Vessel, No. of Decks, Etc.	Owners.	Trade.	Report of Prog- ress.
58	Stoux	461	15.5	Reciprocating	1400	Single Screw Passenger	Puget Sound Nav. Co.	Passenger	In commission.
60	Paterson	120	11.5	Reciprocating	370	Single screw, single deck steel whaler.	Canadian N. P. Fisheries Co.	Whale Hunting	In commission.
61	Moran	120	11.5	Reciprocating	370	Single screw, single deck steel whaler.	"	"	In commission.
63	Star II	150	11.5	Reciprocating	400	Single screw, single deck steel whaler.	U. S. Whaling Co.	"	In frame.
64	Star III	150	11.5	Reciprocating	400	Single screw, single deck steel whaler.	U. S. Whaling Co.	"	In frame.
65	Star I	188	11.5	Reciprocating	500	Single screw, single deck steel whaler.	U. S. Whaling Co.	"	In frame.
66	Hoquiam	130	11.5	Reciprocating	370	Single screw, single deck steel whaler.	Canadian N. P. Fisheries Co.	"	Frames bent.
67	Westport	130	11.5	Reciprocating	370	Single screw, single deck steel whaler.	"	"	Frames bent.
68	Sol Duc	1130	14.5	Reciprocating	1500	Single screw, 2 deck steel passenger steamer	Inland Nav. Co.	Passenger	Keel laid.

THE SEATTLE CONSTRUCTION AND DRY DOCK CO.  
AND THE LAUNCHING OF THE U. S. SUBMARINE  
TORPEDO BOATS F-3 AND F-4.

Every profession, in connection with the burden of large business interests, faces separately and often extremely difficult problems, but the most important element in all such large business transactions is the capacity of the man in charge. To head the former Moran Company as President and General Manager was a big undertaking, but it was not a big risk in the hands of the man who after five years of hard and conscientious work combined with foresightedness and capability, as a Naval Architect of reputation, a business man of integrity and of no small capacity, emerged through his quiet, unassuming but effective and clean efforts to the head of the Seattle Construction and Drydock Company, Mr. J. V. Paterson.

The above Company purchased the business and good will of the former Moran Company and will expend the approximate sum of one million, two hundred and fifty thousand dollars in improvements.

A new floating drydock of 12,000 tons capacity will be constructed this year, costing about \$600,000, plant renovations will be made by additional new machinery, rearrangement of operating shops, building of new piers, thereby increasing wharfage facilities, in connection with which a large amount of dredging is necessary.

The new drydock will enable this Company to handle the largest vessels coming to this port, with the exception of the Great Northern Steamship Company's S. S. "Minnesota."

Such vast improvements, requiring the expenditure of this large capital, is not only a credit to the firm and its President, but a compliment to the port of Seattle.

The future possibilities of the shipping industry on this Coast and in particular at this port, fully warrants the construction of a drydock of this size and the improvements to this Company's plant, as above illustrated, will, without a doubt, be favorably received and appreciated by all ship-owners in this and future times, and Pacific Marine Review desires to extend its sincere appreciation and congratulations.

On Saturday, January 6th, the Seattle Construction and Dry Dock Company most successfully launched the United States Submarine Torpedo Boats F-3 and F-4. The honor of sponsor fell to Mrs. Manson F. Backus, wife of the President of the National Bank of Commerce, of this city. The dimensions of the vessels, as given in previous issues of this publication, are 142' 7" long, extreme beam 15' 3", depth 16' 10.5", with a total displacement of 400 tons when submerged. The engines are of the four-cycle type, developing 780 h. p., making 400 revolutions per minute. A great steam radius of action, minimum 2,400 miles, maximum 3,200 miles, will be obtained by the use of kerosene as fuel. When submerged, electricity is supplied by large and powerful storage batteries. The main motors develop 300 h. p. at 285 revolutions per minute. Four torpedo tubes are installed in the bow, each tube carrying a F 5.2 N. 45 C. M. Torpedo, with provision to carry two in reserve on the battery deck.

Both vessels are equipped with submarine signalling apparatus and in general are considered to be of the most modern and formidable type ever built in this Country, of which F-2, built by the Union Iron Works, at San Francisco, and launched in September last, is a sister-ship.

BARGE TO BE CONSTRUCTED TO CARRY FUEL OIL.

It is announced that a barge, to cost \$37,800, is to be constructed at the Puget Sound Navy Yard, at Bremerton, which is to be used to carry fuel oil from Seattle to the central power plant at the Navy Yard. This barge will have a capacity for 6,200 barrels of oil, or 800 tons, and will be 160 feet long, twenty-five feet in beam and ten feet, six inches deep.

## NEW STEAMERS FOR N. Y. K.

Mr. F. M. Studley, manager of the Nippon Yusen Kaisha, with headquarters at Seattle, informs us that the six steamers now under construction for this company in Japan are:

For European Line—2 steamers, 10,500 tons gross each.  
For American Line—2 steamers, 6,200 tons gross each;  
For Domestic Coast Line—2 steamers, 3,500 tons gross each.

Detailed particulars of these steamers will be published in an early issue of Pacific Marine Review.

## NEW STEAMER FOR CHAS. R. McCORMICK &amp; CO.

The S.S. "Willamette", owned by Chas. R. McCormick & Co., arrived at Portland on her maiden trip December 26th, 1911.

The "Willamette" was recently completed at San Francisco, her machinery furnished by the Main Street Iron Works of that city and her hull built by the Bendixen Shipbuilding Company, of Eureka.

The steamer has accommodations for 65 passengers and capacity for handling 1,000,000 feet of lumber. General freight will make up the northbound cargo, and on the return trip Oregon fir will be carried.

With the Willamette in commission, Charles R. McCormick & Co. have five steamers running out of Portland and Puget Sound in the coastwise trade, the other four being the Klamath, Yellowstone, Yosemite and Shasta. The dimensions of the new steamer are as follows: Length over all, 205 feet; beam, 40 feet; depth of hold, 15.6 feet. She is of 555 tons net, of 903 tons gross register, and has a speed of eleven knots.

Bids for building two Steel Dredges for the U. S. Government, for use on Sacramento River, California, were opened in San Francisco by Major Cheney, December 27th, 1911, and were as follows:

	One Dredge.	Two Dredges.
Ellicott Machine Works .....	\$205,000	\$356,000
Yuba Construction Company ..	\$231,700	\$439,500
Moore & Scott Iron Wks., S. F.	\$241,500	\$471,000
Union Iron Works, S. F. ....	\$267,750	\$517,100
S. F. Bridge Company .....	\$248,000	\$484,000
Standard Amer. Dredging Co...	\$300,000	\$500,000

Wilson Bros. & Co., Lumber Manufacturers, Aberdeen, Wash., have placed an order with the Harlan-Hollingsworth Shipbuilding Co. of Wilmington, Del., for the construction of a steel steamer to cost \$250,000. This steamer is to be 251 feet long, 41 feet beam and will draw when loaded, 17' 6", and is to carry about 1,750,000 feet of lumber. It will be 1250 horse-power and capable of making eleven knots per hour at 17' 6" draught. The vessel is now under construction and will be completed about August 1, 1912, is to be an up-to-date passenger and lumber carrying vessel, built to be run in connection with the lumber business of Wilson Bros. & Co. 45 first-class passengers and 15 steerage will be carried.

Capt. C. E. Allen, of the S. S. "Svea," will take charge of this new steamer and bring her around the Horn next August.

The steamer "Princess Adelaide" of the B. C. Coast S. S. service of the C. P. R. is being equipped with oil burning apparatus at the yards of the Seattle Construction and Drydock Company, Seattle.

## NEW C. P. R. STEAMERS "PRINCESS PATRICIA" AND "PRINCESS SOPHIA."

The new C. P. R. steamer "Princess Patricia", formerly known as the "Queen Alexandra," a turbine vessel with a speed of twenty-one knots an hour, left Glasgow on January 4th, bound for Vancouver, B. C., via St. Vincent, Montevideo, Coronel, Callao and San Francisco.

The "Patricia," which was bought from the Clyde Passenger Line for service between Vancouver and Nanaimo, was altered to suit the Canadian Pacific, the work being supervised by J. Alexander, assistant superintendent engineer of the local branch of the company. The hull of the Princess Patricia was boarded in for the long voyage out. Capt. A. A. Lindgren, who brought out the new steamship Princess Alice, now being made ready for service, is on his way to Scotland to bring out the new steamship "Princess Sophia," built by Bow McLachlan & Co. of Paisley, to take the place of the steamship Amur in the northern British Columbia coasting trade.

## EXTRACTS FROM ANNUAL REPORT OF THE SECRETARY OF THE NAVY.

In his annual report Secretary Meyer says that a total of forty battleships, with a proportional number of other fighting and auxiliary vessels, is the least that will place the United States on a safe basis in its relations with the other world Powers, and "while at least two other Powers have more ambitious building plans, it is believed that if we maintain an efficient fleet of the size mentioned we shall be secure from attack, and our country will be free to work out its destiny in peace and without hindrance. The history of all times, including the present, shows the futility and danger of trusting to good-will and fair dealing or even to the most solemnly binding treaties between nations for the protection of a nation's sovereign rights and interests, and without doubt the time is remote when a comparatively unarmed and helpless nation may be reasonably safe from attack by ambitious, well-armed Powers, especially in a commercial age such as the present. The economical system of a great commercial nation is so delicately balanced that even the threat of war is very discouraging and harmful, while war with any other Great Power would cause incalculable damage, and it is more necessary now than ever before that we should be fully prepared, and every other Power should understand that while seeking peace we are prepared for war."

The United States Navy, Mr. Meyer says, has rejected the turbine for propelling machinery for battleships in favor of reciprocating engines, although this is contrary to the judgment of European naval experts. Exhaustive tests convince authorities in this country that the reciprocating engine is about 30 per cent. more economical at cruising speed than the turbine, and of about the same economy at high speed.

Battleships 36 and 37, now in course of construction, mark, the Secretary says, a distinct advance on any vessels in existence. These vessels will be oil-burners and will carry no coal. They are to be of about the same size as the "Delaware," but their machinery will weigh 3,000 tons less, or a saving of 30 per cent., and the fireroom force will be reduced by 50 per cent.

The Panama Canal is destined to become the most important strategic point in the Western Hemisphere, and makes a Caribbean base absolutely necessary. The best base is Guantanamo Bay, Cuba, which Cuba has ceded to the United States for naval purposes. This base, Mr. Meyer says, will enable the United States to control the Caribbean with all its lines of approach to the Canal, and with a torpedo base at Key West, will render the Gulf of Mexico immune from attack.



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## U. S. Hydrostatic Tests and Boiler Construction Compared With Other Nations

The mass of material at one's disposal on subjects of essential and extensive nature renders their clear presentment within a moderate compass somewhat difficult, in particular so when one desires variety of discussions, pondering within spheres in which the sextant, the chronometer, the standard compass, the azimuth mirror, the station pointer, charts and parallel rulers, Lord Kelvin's much appreciated sounding machine and all sundry necessary implements so essential to safe navigation are rendered useless.

In other words, when one insists to assist in a way to dissolve problems beyond familiar topics of the accustomed navigating bridge, changing as it were from bracing atmosphere to regions of artificial air, descending to the lower portion of a vessel, to which no sun, moon or starlight can penetrate, but in which the motive power for the propelling of a steamship is produced, "The Boiler Space."

On this matter more especially the writer would crave the gracious forbearance of the critic. He wishes it thoroughly understood, however, that not in the least degree does he claim in this venture profound and technical knowledge in discussing problems pertaining to another profession. It is scarcely consistent with the "eternal fitness of things" that he should. "Chacun son metier et les vaches sont bien gardees;" is a French proverb appropriate in this respect and when figuratively translated into the nautical language of our country would read: "The helmsman to the wheel and the cook to the fore-sheet."

I claim in the following discussion but little as strictly original. It is based upon years of observation, matter gleaned from the works of men of repute and information derived from intercourse with shipmates and the cloth generally. Nevertheless, do I hope it may prove acceptable and like a "Handy Billy" clapped on to the fall of a "Luff Tackle Purchase" may assist the more powerful ones in pulling hard and effectively in the right direction for a revision of laws, which most startlingly and unfavorably compare with those of other nations.

The writer's leading object has been in previous editorials and now is to elucidate in plain English some of those important elementary principles which the "Savants" have involved in such a haze of mystery as to render pursuit in research somewhat difficult with perhaps the exception of the ancient lawmakers across the mountains,

who with more or less "Savior-faire" participated in shaping rules, some of which have become obsolete before many a reader's day of birth.

Such laws are not only a hindrance and annoyance to the profession of modern marine Engineers and our Steamboat Inspection Service in general, but an imposition and injustice to our shipowners and managers of steamship companies in particular.

Thus bearing in mind the motto which now adorns Pacific Marine Review's cover, "Be Just and Fear Not," I make my comparison with necessary suggestions and first reproduce part of our laws in relation to boiler construction, with those of the British Board of Trade and British Lloyds, a comparison which will be much enhanced by a table, specially prepared for this article, under the heading of "The World's Boiler Construction," including naturally the Bureau Veritas and German Lloyds, with which regulations the imposed Hydrostatic Test for inspection of boilers and their safety is so intimately connected.

In the comparison of defined rules of other countries with those of our own, less befitting the progress of time, I intend to weigh conscientiously the good, unmercifully criticize the bad, with the suggestion to graft efficiency to the still life bearing branches of the tree "antiquity," and as a bee gathers honey out of many flowers and makes a new bundle of all, so should those entrusted with the shaping and revision of laws in our country, dig into the different Navigation Codes of those progressive nations which have excelled us in enforcing laws, to properly guard the legal and moral rights of all concerned.

"Why are Hydrostatic Tests Applied to our Boilers Every Year?"

Mr. Robert Dollar, during the deliverance of an address before the students of the University of California on Thursday, September 7th, 1911, on "The American Merchant Marine as it Affects Our Foreign Commerce," stated amongst other important and vital subjects: "We have to put a hydrostatic pressure on our boilers once a year, one and one-half the steam pressure. This racks our boilers and pipes so that it reduces their life by at least twenty per cent., etc." While it is far from the writer to shield the inadequacy of our Laws in any respect, I feel assured that Mr. Robert Dollar never would have permitted himself to make this public utterance if a more perspicacious study of the law in comparison with those of other nations had been made.

It is naturally of vital importance that inspections and tests of strength should occasionally be resorted to for the purpose of determining the precise condition of the boiler at the time and its absolute safety under the conditions of its regular use. Custom and opinion differs somewhat amongst the ablest and most experienced engineers, as to the precise method and extent to which such examinations and tests should be carried.

Many of our inspectors consider this yearly hydrostatic test essential and a particularly good safeguard, in the opinion of which in relation to yearly application of these tests I do not co-incide and must condemn as unnecessary, and as soon as our law makers have arisen to the fact that if a boiler is constructed as outlined by the British Board of Trade and the rules of the here mentioned Associations, a yearly application of such hydrostatic tests becomes superfluous.

Truly if the nations in possession of the great fleets of magnificent ocean steamers, as England, Germany, France and that of the late addition to the world's power, Japan, are freed of such regulations, the respective rules of these nations, which we fully recognize as efficient in every respect, according to reciprocal agreement; this great, big

country of ours, and to repeat Uncle Joe Cannon's fond remark, "A darn big country, my boy"—"Ought-To-Be."

We have more distance of individual coast line, not taking into consideration our navigable Great Lakes, than the above mentioned nations, combined possess, and a shamelessly neglected and unmercifully handicapped Merchant Marine, prevented by injudicious legislation from further expansion.

Mr. Patrick H. W. Ross, author of "The Western Gate," a book which should be read by every patriotic American and for whose author the writer has particular regard and admiration, said on an entirely different subject, but appropriately applied in this discussion: "Not what some government or authority or power or someone else is going to do to us or for us, but what we, ourselves, are going to do as soon as we have properly adjusted our old friend Mr. 'What-We-Ought-To-Do!'" I remorselessly add to this: "It takes finer courage to oppose mistakes than to continue in lethargy for the mistake perpetrated and the one who conscientiously assists his country to be right, is the last to applaud her when she is wrong, for if our mistakes teach us nothing, it were hardly worth while to make them."

In the laws governing the Steamboat Inspection Service, Edition July 1st, 1911, page 14, section 4418, we find the following: "The local inspectors shall also inspect the boilers and their appurtenances in all steam vessels before the same shall be used, and once at least in every year thereafter, and shall subject all boilers to the hydrostatic pressure. All such vessels shall comply with the following requirements, namely: That the boilers are well made, of good and suitable material, etc. And further: All boilers used on steam vessels and constructed of iron or steel plates, inspected under the provisions of section forty-four hundred and thirty, shall be subjected to a hydrostatic test, in the ratio of one hundred and fifty pounds to the square inch to one hundred pounds to the square inch of the working steam power allowed. No boiler of flue pipe, nor any of the connections therewith, shall be approved, which is made, in whole or in part, of bad material, or is unsafe in its form, or dangerous from defective workmanship, age, use or other cause."

In the "Regulations and Suggestions as to the Survey of the Hull, Equipment and Machinery of Steamships Carrying Passengers" issued by the Board of Trade, we find on page 32, paragraph 114, under the sub-head, "Strength of Boilers to be Ascertained and Working Pressure fixed by Calculation" as follows:

"Before requiring a boiler to be tested by hydraulic pressure, the Surveyor should examine it as far as possible, take the necessary measurements and calculate the working pressure for it by the Board of Trade rules. This instruction applies to superheaters and steam chests, as well as to boilers, evaporators, etc.

#### "Hydraulic Test." 115.

"Surveyors should see all new boilers, and boilers that have been taken out of the ship for a thorough repair tested by hydraulic pressure to double the working pressure that will be allowed. The test should be made previous to the boilers being placed in the vessel and before they are lagged.

The hydraulic test should not be applied until the boiler has been examined in accordance with Clause 113, and until the strength has been calculated from the necessary measurements taken from the boiler itself as per clause 114.

When the boilers are in the vessel the Surveyor may, at any time he thinks it necessary before he gives a de-

claration, require them to be tested by hydraulic pressure to satisfy himself as to the sufficiency or efficiency of any doubtful part, or of any part not easy of access for inspection.

The full hydraulic test should be applied to the boilers of all steamers that have not previously had a passenger certificate, before a declaration is granted for them. The full hydraulic test should be applied at each annual survey to boilers which are too small for the Surveyor to enter or satisfactorily examine internally. (A very good ruling.—Ed. Note.)

After a boiler has been subjected to the hydraulic test, the Surveyor should inspect it, as far as possible, both externally and internally.

If, while a boiler is being tested, there are any visible or audible indications of its being defective the Surveyor should at once advise those conducting the test to relieve the boiler of pressure, and take steps to ascertain the nature and extent of the defect. The Surveyor's primary duty at a test is, however, to note the results and satisfy himself that it is properly made, the conduct of the test being left to the representatives of those who own the boiler. When a test is unsatisfactory the defects should be made good and the boiler re-tested.

Lloyds Register of Shipping, on page 83, under the heading of "Periodical Surveys, section 19, number 1, states: "The machinery and boilers of all steamships and the donkey boilers of sailing vessels are to be surveyed annually if practicable, and in addition are to be submitted to a Special Survey upon the occasions of the vessels undergoing the Special Periodical Surveys Nos. 1, 2, and 3, prescribed in the rules, unless the machinery and boilers have been specially surveyed within a period of twelve months."

6. "The boilers and superheaters are to be examined internally and externally, and if deemed necessary by the Surveyors, both boilers and superheaters are to be drilled or tested by hydraulic pressure; the safe working pressure is to be determined by their actual condition."

Clause No. 13, under the heading of "Boilers," reads: "At these surveys the boilers and superheaters are to be examined internally and externally, and if deemed necessary by the Surveyors, both boilers and superheaters are to be drilled or tested by hydraulic pressure; the safe working pressure is to be determined by their actual condition."

In careful perusal of the three above distinctive, somewhat condensed rulings, the reader is doubtlessly now confronted with the question: "Why should the American shipowner contend with such delusive and illusive laws any longer?" I purposely use these expressions, for delusion is deception from want of knowledge, and illusion is a cheat on the fancy or senses.

The answer is simple: "Build your boilers as other Nations build them!"

The deliverance of the hydrostatic test, yearly applied, will and must come and it will then be up to the Inspector and Surveyor, as the case may be, after a careful examination of the boiler, during the periodical survey laid down in the rules by the board which controls, and the respective Associations in which we chose to insure our ships and with which all other countries work in thorough and harmonious co-operation with each other, thereby safe-guarding the rights of the assured as well as the insured.

What does the extra expense of a boiler amount to while under sane and safe construction?

	U. S. Statutes.	British Board of Trade.	British Lloyds.	Bureau Veritas.	German Lloyds.
Hydrostatic test.	1½ times working pressure.	Twice working pressure.	Twice working pressure.	Twice working pressure.	None (Note Factor of Safety)
Factor of safety.	About 3½ to 4 in. rules.	4½	Between 4 and 5 variable.	4.4	4.65 to 5.
Material for rivets.	None!	T. S. 52,000 to 60,000 lbs. Elong. at least 25% in 10 in. Contraction of area at least 10%.	T. S. 52,000 to 60,000 lbs. Elong. at least 20%. Quench must bend 180° around diam.=3t.	T. S. of 53,000 lbs. or less. Temper test same as British Lloyds.	T. S. 45,000-51,000 lbs. Elong. 23½% depending on thickness of plates.
Rules for rivetting.	None!	S. S. 46,000 lbs. F. S.=5 rivets in double shear to count only 1.75 times single section. Diam. of rivets at least t. Center rivet to edge plate=Diam. rivet x 3  Diagonal pitch= $\frac{2}{10}$ (pitch x 6) x (Diam. x 4)  and other formulas for chain and zig-zag rivetting.	Rivets in double shear to count only 1.75 times single section. S. S. 85% of T. S. of plates. Where experiments have been made these strengths may be used.	S. S. when assumed to be 0.8 T. S. of plates. At working pressure S. S. to be 1 part of full S. S. double shear twice single section. Circular seams to be double rivetted if plates exceed ½ inch.	S. S. when assumed to be 0.8 T. S. of plates F. S.=5 for lap-joints and 1.15x5 for double butt joints. But rivet area to be taken. But straps at least 0.75 of plate. Pitch of rivets not over 8 times thickness of plate.
Material for shells.	Contraction of area 40 to 50% for various thicknesses. Elong. 25% in various lengths, from 2 to 8 in. in thickness from ½ in. upward.	T. S. 54,000 to 64,000 lbs. Elong. at least 18%. Strips 2 in. wide must bend 180° over diam.=3t.	T. S. 52,000-60,000 lbs. Elong. at least 20% in 8 in. Quench strips must bend 180° around Diam.=3t.	T. S. not over 62,000 lbs. Elong. 20 to 35% for various T. S. Quench strips must bend 180° around diam.	T. S. not over 62,000 lbs. Elong. 20-26% for various T. S. Quench strips must bend 180° around diam.=4t.
Shell plate formula.	$p = \frac{tx2xT}{Dx6}$ for single rivetting $p = \frac{tx2xT}{Dx5}$ for double rivetting. Note—No allowance for value of seam.	$p = \frac{Tx Bxtx2}{DxFx100}$ p=working press. t, thick in inches. T. S. tensile strain allowed. F.=4½+additions depending on character of joints and holes. B.=per cent of strength of joint to solid plate or rivets whichever least.	$p = \frac{c \times (t-2) \times B}{D}$ C=constant varying from 18.5 to 20 depending on kind of joint.	$p = \frac{Tx Bx (ix.04)}{Dx4.4x10}$ B=per cent of plate section at joint. p. also depends on rivet section.	$p = \frac{tx2xBxT}{DxFx100}$ F. varies from 4.65 to 5, depending on thickness of plate.
Plates for flanging.	Contraction of area 40 to 50% depending on the thickness of plate.	T. S. 52,000-60,000 lbs. Elong. 20% in 10 in. Strips must bend 180° around diam.=3t.	T. S. not over 56,000 lbs. Elong. at least 22%. Quench strips must bend 180° around diam.=3t.	T. S. not over 62,000 lbs. Elong. 20-31% for various T. S. Strips must bend 180° around diam.=3t.	T. S. not over 53,000 lbs. Elong. not under 22½%. Strips must bend 180° around diam.=4t.
Material for stays.	For steel must bend 180° around diam.=3t.	T. S. 54,000-64,000 lbs. Elong. at least 20% in 10 in. Steel stays must not be worked in fire.	T. S. 52,000 to 60,000 lbs. Elong. at least 20% in 8 in.	Same as for shell plates.	Large stays 41,800 to 61,000 lbs. Elong. same as shell plates screwed stay T. S. 44,000 to 53,400 lbs. and corresponding Elong.
Tensile test for stays.	Not over 6,000 lbs per sq. in. for iron stays. Not over 8,000 lbs per sq. in. for steel stays.	9,000 lbs. per sq. in. on net section if T. S. lies between 54,000-64,000 lbs.	Stays under 1½ diam. 8,000 lbs. per sq. in. Stays above 1½, 9,000 lbs. per sq. in.	1 at lowest test limit on net section. Then add 1 inch to diam. of stay.	Not to exceed ¼ to T. S. or about 8,500 lbs. per sq. in.

	Is Tensile Strain.	ELONG.	Is Elongation.	T.	Is Thickness in inches.
	Is Single Section.	P.	Is Working Pressure.	Diam.	Is Diameter.
	Is 4½ plus addition, depending on character joint and holes.			Sq.	Is Square.
	Is per cent of strength of joint to solid plate on rivets which ever least.			In.	Is Inch or Inches.
T. S.					
S. S.					
F.					
E.					

The life of a boiler constructed under first-class rules, diligently maintained and preserved with such modern appliances as circulation of water while raising steam, feed heaters, evaporators and filters is approximately sixteen years, without any great cost of up-keep, although I have served in my younger days on board of a twenty-five-year-old steamer, with still her first boilers in excellent condition, a vessel underwritten by Lloyds.

Compare the inferior and cheaper built boiler under our present ruling, its life of about ten years and the cost caused by the damage of ten or fifteen hydrostatic tests, applied annually, not considering the delay of time resulting in serious and expensive repairs, during the shorter existence of acute struggle.

The above table, although compiled in a much condensed form shows at a glance the principal various rules and regulations in relation to boiler construction, as promulgated by the British Board of Trade and the great corporations and associations above mentioned. The comparison is striking and again vividly proves what I have tried to reveal in this and previous articles.

The United States Navigation Laws are as usual sadly lacking!

We have no hard and fast rules: First: In regards to the quality of material used in rivetting; second, we glorify in the absence of rules governing strength of rivetting joints; third, we prefer a much lower factor of safety than that required by foreign authorities, and fourth, last but not least, we content ourselves with a much lower hydrostatic test pressure, but we prefer to apply this test every year, immaterial whether the boiler is sound or not, an annoyance causing unnecessary delay, loss of time and periodical extravagance at the expense of our indeed burdened shipowners. The comparison of the tensile test for stays and material for stays should count as inadequacies numbers five and six respectively.

Cast adrift the old and adopt the new!

Let Lake-laws be Lake-laws, but for the sake of all concerned, revise the Laws of Coast and Off-shore trade, of our Merchant Marine to come, "An American Merchant Marine On The Seven Seas!"

Centuries ago, one of the Latin authors said: "It is better to seek the fountain than to follow the stream." Perhaps it was not original even with him, but in any event it has been variously repeated down to the present time, and it seems now to be accepted that it is well to test our progress in any direction by every once in a while applying fundamental principles to what is apparently accepted doctrine, to see if we have kept a true course, or how far we have deviated from it by perhaps neglecting to make due allowance for strong tidal current and apparently blindly omitting to apply the large deviation created by a poorly placed compass.

In spite of the inadequacy of much of our practice and many of our doctrines, the law must naturally be behind the advance guard of progress in general to work out change and revision!

However, what of maritime progress, a progress which does not exist and which has been particularly stagnant since, well, I am loath to repeat the time, for we have just celebrated the birth of Christ!

Is there any reason that our maritime law should be absolutely devoid of motion, while the excellent example of other progressive, prosperous and larger maritime trading nations brilliantly shines forth in tonnage and number as well as in higher type of ocean-going vessels.

E. F.

#### SAN FRANCISCO CORRESPONDENT ADVOCATES PAYMENT OF CANAL TOLLS BY AMERICAN COASTWISE VESSELS.

We have received the following article from a correspondent in San Francisco, who does not favor the free passage through the Panama Canal of American vessels engaged in the coastwise trade, but advocates this for American ships engaged in foreign trade only. Pacific Marine Review has placed itself on record as declaring that all ships under the American flag—whether engaged in the coastwise or over-sea trade—passing through the Panama Canal should be entirely free of any toll charge.

The subjoined, however, will no doubt prove of interest to our readers, as all discussions along these lines are at present of intrinsic value.—Ed. Note.

"What Congress will do in the coming session to assist in the rehabilitation of our Merchant Marine is a question that many are asking, and the answer is probably what it has been for so many years,—nothing.

Much is now being said and written, pro and con, as to the advisability of allowing United States vessels in the coastwise trade to make use of the Panama Canal free of tolls, or to provide a way of reimbursing owners of such vessels for such tolls as they may pay, if payment is found to be obligatory by reason of treaty agreements. The question then arises why this favor especially to vessels engaged in coastwise trade, —and by coastwise trade is meant trade between any two ports in the United States including trade between the Atlantic and Pacific Oceans,—when that trade is, by our present laws, so well protected from encroachment by foreign flags. It is claimed that this concession is necessary in order to enable vessels plying between ports on the Atlantic and Pacific to compete with the transcontinental railroads, but it is rather difficult to understand this when at the present time we have a large trade between the oceans by way of the Isthmus of Tehuantepec and by way of Panama, which involves extra handling of cargoes and a rail haul under more difficult conditions than those which prevail in an all rail route across the country.

Why not rather consider this concession as applying to United States vessels trading to foreign ports? The rehabilitation of our merchant marine does not mean only the increase in coastwise tonnage but more especially the increase of tonnage in trade to foreign countries, and it is to this that Congress should give its first and best attention. If, with the Panama Canal, we have a means of giving some concession which will in some degree offset the increased cost of building and operating steamers under our flag over that of the flags of foreign countries, it would seem that advantage should be taken of it. Possibly the objectors to that bugaboo "subsidy" could be persuaded to support this "concession."

In this connection it is interesting to note that in the French budget for 1911 provision is made for the payment of £392,000 for shipbuilding bounty and £1,040,000 for navigation bounties. In addition to the above, the following subventions to shipping companies are paid:—

Service between France and Corsica....	£ 22,000
Mediterranean lines .....	54,067
Service between Calais and Dover .....	18,400
New York and Antilles service .....	443,320
Indo-China and Japan.....	238,253
Service between France, Algeria, Tunis, Tripoli and Morocco .....	58,000
Australia and New Caledonia .....	129,368
East Africa and Indian Ocean .....	76,985
West African coast service .....	10,640
Brazil and Rio de la Plata .....	55,200



## Lighting The Panama Canal

Work on the project for lighting the Canal and placing buoys and daymarks was begun in April, 1911, and it is advancing in accordance with the schedule made in June. Surveys and clearing the land of obstructing trees and foliage are almost completed, and the construction of range light towers is under way.

The range lights are omitted in Culebra Cut, where their use is hardly practicable, and on four of the shorter tangents on the remainder of the Canal. The project includes a light and fog signal on the west breakwater in Limon

beacons, published in this issue, will reveal the nature of the clearings. At each tangent, it is necessary to have two ranges, of two lights each, to prolong the sailing line, in order that the pilot may hold his course up to the point of turning. The range lights are situated on land, and it is necessary to cut a trocha through the jungle until suitable locations for the lights are found. These trochas are the width of the canal at their beginning and taper down to about 400 feet in width at the end.

There remains to be cleared about 200 acres, composed of small areas in various sections. One of the longest areas



Bay, a light on the east breakwater, should it be built, and gas and nun buoys lighting and marking the channel to the Mount Hope dry dock. Acetylene gas will be used for the lighted buoys in all the sections of the Canal, and for the beacons in the Gatun Lake section. For the beacons in the Atlantic, Pacific, Miraflores, and Culebra Cut sections, electricity or acetylene gas is to be used.

Reference to the map showing the layout of lights and

to be cleared is that at the Frijoles tangent on the range-line for northbound ships. It is about 14,000 feet, or nearly three miles long, 1,000 feet wide at its beginning and 400 at the end. To find an elevation for the lights on this tangent it was necessary to cut through dense jungle and forest. The shortest area cleared is about 1,800 feet, and the others vary between these two extremes, local conditions determining in each instance.



The construction of range towers was begun in the Pacific entrance, and is being carried on in accordance with the following schedule:

To June 30, 1912—Construct foundations and towers for Ranges Nos. 1-2, 9-11, and 13-14 of the Pacific sections; foundations and towers for Ranges Nos. 5-6, and 7-8, Atlantic section; foundations, towers and boat landings for Ranges Nos. 1-2, 11-12, 21-22, and 29-31, and foundations for beacons Nos. 19, 20, 23, 26, 27, 28, 20 and 32 in Gatun Lake section. Establish a central plant at Balboa, at which place the smaller beacons, buoy sinkers, electric transmission poles and interior fittings for the towers will be constructed of reinforced concrete.

To June 30, 1913—Complete the installation of beacons in the Atlantic and Pacific sections; as soon as the water is sufficiently high in Gatun Lake to permit the hauling of materials to the sites in barges, construct range towers in that section; erect reference targets. These reference targets will be part of the system of permanent marks on shore by which the location of the gas buoys will be established.

set up and filled with concrete, after which the bottom ring of the conical portion of the tower is set up and filled, and then a second ring is set up and filled. After the concrete in the lower ring has set, the forms are stripped and set up on top of the second ring, and filled. The second ring is taken off and set up on top of the preceding, and so on to the belt course below the watchroom. The forms for the watchroom and lantern are then set up and filled with concrete. All the work is carried on from a scaffold tower inside the tower. In this way the tower rises at the rate of four feet per day. The circular stairway in the tower is constructed entirely of reinforced concrete, the newel post being cast in place as the tower walls rise, and the stair treads and spiral stair string being cast in units at the central plant at Balboa.

The lantern is supplied with slide ventilators by means of which circulation of the air may be regulated, thus insuring a steady flame in the lantern.

The beacons for Culebra Cut, from Bas Obispo to Pedro Miguel, and along the sides of the channels in the Atlantic and Pacific Division and Gatun Lake section are 4



MAP SHOWING PROPOSED PROJECT FOR LIGHTING AND BUOYING PANAMA CANAL AND APPROACHES.

During the fiscal year ending June, 1913, it is purposed also to construct the buoy depot on Gatun Lake, install the electric transmission lines required for the ranges and beacons, manufacture spar buoys, and construct the light keepers' dwellings.

The towers are constructed by means of steel forms, which are designed to be used for the three types of towers used in the Atlantic and Pacific sections. They consist of sections four feet high, of such size as to be easily handled by two laborers. The forms for the octagonal base are first

feet by 4 feet in plan, 7 feet high to cornice, and are to be constructed of reinforced concrete, surmounted by a concrete post or column, which will support the lens.

#### Buoys and Light Powers.

It has not yet been determined what gas buoys will be installed, but bids will soon be asked for this part of the system of lighting. Such buoys as will be required are composed of a cylindrical floating body or tank, surmounted by a steel frame which supports the lens at a



height of about 15 feet above water level. The body is about 8 feet in diameter, to the bottom of which is attached a counterweight of suitable size to maintain the lantern frame in an upright position at all times. The buoys will be moored in position along the edge of the dredged channel by a heavy chain and a concrete sinker, and will remain lighted from 6 to 12 months without being recharged.

The candle power of the lights will vary according to the length of the range; being from about 2,500 to 15,000 candle power. The most powerful lights will be those marking the sea channels at the Atlantic and Pacific entrances, they being visible from about 12.5 to 18 nautical miles. The beacons and gas buoy lights will be about 950 candle power.

To eliminate the possibility of conflicting the lights with one another and with lights ashore, all the range lights, beacons, and buoys will have individual characteristics formed by flashes and combinations of flashes of light and dark intervals.

#### IMPORTANT SHIPPING AGREEMENT.

##### Cunard Acquires Big Interest in Anchor Line.

An agreement has been concluded whereby the Cunard Steamship Company, Limited, will acquire a large interest in the Anchor Line (Henderson Brothers), Limited. It is believed that the co-operation of the two lines in the North Atlantic trade and the increased scope afforded for the development of the Indian service of the Anchor Line will prove of material benefit to both companies.

The Anchor Line has an authorized capital of £575,000 in £10 shares, £325,000 being five and a half per cent. cumulative preference and £250,000 ordinary shares. The whole amount has been subscribed and called up. There is also four and a half per cent. redeemable first mortgage debenture stock for £465,000. The Cunard Company has a subscribed capital of £2,000,000 in shares of £20, of which £1,600,000 is paid up, 60,000 shares being fully paid and 40,000 having £10 paid.

#### TOWBOAT COMPANY CONSOLIDATION.

From private, but absolutely authentic sources, we have learned of the amalgamation of the Crosby Towboat Company and the Chesley Tug and Barge Company, both of Seattle.

The name of the new firm has as yet not been announced, but we are assured that Mr. W. R. Chesley is appointed general manager, with offices at 104 Grand Trunk Pacific Dock, heretofore occupied by the Chesley Tug and Barge Company.

With the good connections the two firms have always had, this consolidation will be a factor to reckon with in future competition, in the hands of as capable a manager as Mr. Chesley, with principles of unimpeachable honor in mutual dealings and execution of trusts for others, which is known by all those who, both socially as well as in business transactions, have had dealings with him.

The fleet of the new firm consists of the following towboats:

"Alice," "Cornelia Cook," "Bonita," "F. H. Folsom," "Harold C.," "Katy," "Tempest" and the gasoline launch "Chema."

Furthermore, seven barges, of which six range from 350 to 600 tons carrying capacity, some recently built by the Seattle Construction and Drydock Company, are of particular fine timber and excellent workmanship.

#### H. E. MOSS & CO.'S STEAM SHIP CIRCULAR.

Liverpool, January 1, 1912.

Gentlemen:

It is gratifying to record that the anticipations as to the improvement in the prospects of steam shipping, as stated in our semi-annual circulars of January and July last, have been more than amply fulfilled, especially during the last six months, and what is more satisfactory, the improvement still continues, and in our opinion is likely to do so for some time to come. We fully expect that during 1912 and 1913 steamship owners will reap a reward such as they have not experienced during the last decade.

The tonnage afloat is well distributed. Our imports and exports, although very much in excess of previous years, still grow, and we feel convinced that the volume of trade will continue to increase, not only in our own country, but also abroad, and particularly in Canada and the U. S. of America after the next presidential election. The anticipated opening of the Panama Canal, in 1913, and the development of trade in China, which cannot now be much longer delayed, are all factors which are certain to create a demand for steam shipping which will quietly absorb the large amount of tonnage now building, and which cannot possibly be delivered for months after the contract dates, owing to the general shortage of skilled labor which builders are experiencing as well as the difficulty in obtaining material.

Freights, which barely a year ago only enabled owners to cover in many instances depreciation on the cost of their steamers, now yield handsome returns on the capital invested. The demand for tonnage increases from all directions, and is likely to continue to do so as the year advances. The cost of wages, insurance, coals, etc., has so sensibly risen that it is quite impossible for owners to return to the former level of freights even were the demand for tonnage to ease off.

The number of steamers building for regular lines, and others, was never greater. Last year's returns, when published, will be found to exceed those of any previous year on record. Shipbuilders and engineers, with few exceptions, are full of orders, many of them well into 1913. There are very few who can give delivery this year.

Many of the large cargo steamers building for sale for fortunate contractors and nearly completed have been sold at handsome profits. Very few new steamers remain unsold, and it is difficult to obtain them as the prices vary so frequently. The cost of building has increased during the last 12 months fully 15%, and will go higher still, as steel plates will be further advanced in price this month. New steamers of 7,500 tons dead weight approaching completion could be bought a year ago for £37,000 to £38,000, but similar vessels are now worth about £45,000 to £46,000, and other sizes in proportion. Second-hand steamers have likewise improved in value in a much greater ratio, and the market is almost depleted of what may be called cheap tonnage. Many fairly modern steamers have been re-sold at about 20% more than what they realized two years ago, but the high level of prices of 1900 and 1901 has not yet been reached.

For a long time past we have foreshadowed the more general adoption of the internal combustion engine for marine purposes, and within a very short time we shall see some very large steamers fitted with Diesel engines beyond the experimental stage, as many are now being built with these engines, and if, as we fully expect, they are successful, they will create a change in steam shipping not experienced for many years past. Oil fuel for steamers is making rapid strides. Depots are being opened in many parts of the world, and before long oil will displace coal

in many quarters, as it is more economical and occupies less space. Steamers adapted to burn oil fuel require fewer hands than those using coal, besides, oil is more easily handled and is free from dust, which are important factors that are bound not to be lost sight of for passenger steamers.

The amount of tonnage launched during 1911 in the United Kingdom alone, including war ships, will be about 1,800,000 tons, and when Lloyd's returns are published for the quarter ending December 31st, 1911, we estimate that the amount of tonnage under construction, exclusive of war ships, will be about 1,750,000 tons, as compared with about 1,200,000 tons for the quarter ending December 31st, 1912, an increase of about 500,000 to 600,000 tons, and this year we anticipate the output will be greater still.

The combinations and acquisitions of managing and controlling interests of our large steamship lines have been the leading feature to chronicle during the past year, the latest and most important deal on record having been the purchase by the Royal Mail and Elder Dempster Companies of the Union Castle Line, which was just preceded by the Cunard Company purchasing the managing interest of the Anchor Line's Eastern and Western trades—thus proving the wisdom of those who now direct these gigantic concerns, in linking together the trades of the world, avoiding ruinous competition, and what is of more importance, anticipating future developments.

We are, Gentlemen,

Yours respectfully,

H. E. MOSS & CO.

#### FORTY-THIRD REPORT OF NIPPON YUSEN KAISHA.

The semi-annual general meeting of the Nippon Yusen Kaisha was held at Tokio on November 29, 1911, and the following report submitted for the half year ended September 30th, 1911:

The Gross Profits of the Company for the past Half-Year amount to Yen 4,600,679, out of which there has been paid:

Depreciation of the Company's fleet and property .....	Yen	928,390
Insurance Fund .....	Yen	416,854
Ships' Structural Repair Fund .....	Yen	576,667

Yen 1,921,912

leaving a balance of Yen 3,530,156, including Yen 851,389 brought forward from the last Account.

The Directors now propose that Yen 133,938 be added to the Reserve Fund, raising it to Yen 3,200,670. Yen 477,108 to the Reserve for the Annual Reduction of Subsidies, bringing it to Yen 2,027,649, and Yen 1,000,000 to the Fund for the Extension of Services and Improvement of the Fleet, making that amount to a total of Yen 4,500,000, also that Yen 59,465 be allowed as Directors' and Auditors' fees. From the remainder the Directors recommend a dividend at the rate of Ten per cent., per annum, which will absorb Yen 1,100,000.

The Balance, Yen 759,644, will be carried forward to the next Account.

The paid-up capital of the Nippon Yusen Kaisha is Yen 22,000,000, Reserve Fund Insurance and Structural Repair Fund; etc., Yen 23,716,409, and Reserve for Equalization of Dividends Yen 3,300,000.

The dividend of 10 per cent. in cash or stock at par announced by the United Fruit Company is apparently supplementary to the 8 per cent paid in quarterly installments for the year ended September. A supplementary distribution at the same rate was made for each of the three years ended September, 1910, out of accumulated surplus earnings.

#### SEVENTY-FIRST ORDINARY GENERAL MEETING OF THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY.

The 71st meeting of the P. & O. Steam Navigation Company was held in London, on December 2nd, 1911. The net surplus for the year, as shown in the annual report, amounts to £410,914, including £67,181 12s 7d brought forward from the last account. After deducting the amount of the Interim Dividend of 2½ per cent on the Preferred Stock, and 3½ per cent on the Deferred Stock, paid in May last, the balance admits of a further payment of 2½ per cent on the Preferred, and 6½ per cent on the Deferred Stock, together with a bonus on the latter stock of 3 per cent, after making a special appropriation to the depreciation reserve for the year, which is raised to £559,542. The distribution for the year is therefore equal to 9 per cent on the paid-up capital. A balance is carried forward to the next year's account amounting to £67,615.

#### Company's Fleet.

At the date of the last Report, there were under construction two large Mail Steamers, the "Medina," being built by Messrs. Caird, and the "Maloja" by Messrs. Harland & Wolff, and two other Steamers, of the non-mail class, intended for the Company's new Australian Line via the Cape. The "Medina," "Maloja" and the "Ballarat" have entered on their work. The second of the Australian steamers, now to be named the "Beltana," is still in the builder's hands.

More recently the Directors contracted with Messrs. Caird & Co. for two steamers of the "N" class, about 7,000 tons each, a type of vessel found to be well suited for the Company's Intermediate Service with China and Japan.

Looking backward to the year's operations, it is satisfactory to note that no serious casualty has been experienced, and that the work of the fleet has been carried on with the usual efficiency and punctuality, except, in certain instances, where labour difficulties have interfered with the usual programme of sailings.

#### TRANS-PACIFIC NOTE.

Shipments for Oriental points continue to move by all transpacific line steamers in good volume. The export of flour is heavy, with fair enquiry on new business for Hongkong and also North China. There is still a considerable accumulation of cotton to go forward to Japan and China, but accommodations are difficult to secure on account of the scarcity of tonnage, and the high rates at which steamers are held. The herring catch so far has not shown up well, and lumber is slow. Eastbound hemp and matting continue to come in good quantities.

Negotiations have been completed between the Canadian Pacific Railway Company and Capt. James Griffiths, of this city, who acted on behalf of other business interests, for the purchase of the C. P. R. steamer "Amur." The vessel is to undergo some alterations and repairs and when these are completed will be operated principally in the ore business between Howe Sound and Tacoma.

It is reported that the mail contract between the mainland and the islands has been awarded to the C. P. R. and will be carried out by its coast steamships. It was formerly held by the owners of the wrecked Iroquois, and since that disaster has been continued by a service of gasoline launches.

## Review of Marine Insurance For 1911

There is every indication that the results of underwriting in 1911 will be better than has been the case for many years. First year settlements on all hands are reported to be lower than in 1910 or 1909; but the first quarter of 1912 will show that this cannot be taken as a definite prognostication of a profitable account. On the other hand underwriters are now reaping the benefit of the increase in rates on steamers for time while in some cases there has been an improvement in cargo rates. The unsettled condition of international politics has enabled underwriters to take advantage of their position and secure additional premiums for deleting the f. c. & s. clause in the policies. Although this may be considered a small matter it will be found that in conjunction with other advances the premium income for many underwriters will be better by nearly ten per cent than was the case last year.

One difficulty to be faced, however, is the increased cost of repairs consequent on the improvement in trade and this was so keenly felt in the fall of the year that a concerted effort was made to establish an agreement increasing the rates on tramp steamers by ten per cent and on liners by 5 per cent. Unfortunately, owing to lack of cohesion, the proposal was abortive.

Paradoxical as it may appear, a boom in shipping nearly always entails heavier losses for underwriters. When trade is good every available vessel is pressed into service. The result is already apparent in the number of old vessels which have either foundered or been driven ashore in the last three months of the year.

A hopeful feature in the business was the establishment at Paris in November of an International Association of Marine Underwriters. The inaugural meeting was attended by more than 150 representatives of Marine Companies from all parts of Europe. A very favorable indication of the possibilities before the association was indicated by a definite agreement being made at the first meeting to limit the shore risks in the River Plate to ten days. This agreement alone would justify the formation of the association for losses sustained by underwriters, for shore risks on the River Plate have been abnormal in the past. It is understood that a concerted effort will be made to establish a uniform f. c. & s. clause for marine policies; to negotiate with governments with a view of reducing abnormal taxes on marine companies; and in other ways to assist underwriters in removing many of the anomalies which are a burden to the successful operations of transport insurance.

Taken as a whole the total losses of the year will fall much short of the figure estimated for 1910, approximately \$3,500,000 less. There have been no exceptionally serious losses like those of the *Pericles* and *Dakota* in past years, but our list shows some which exceed one million dollars. The most dramatic casualty was the wreck of the P. & O. Liner "*Delhi*" in December. Fortunately the specie and bullion valued at \$1,500,000 was saved and as the steamer was uninsured, underwriters had only to bear the loss on cargo. The largest losses of the year were:

"*Merida*"—\$1,500,00, collision and sank; "*Fifeshire*"—\$1,125,000, wrecked; "*Parisiana*"—\$1,100,000, burnt; "*Bisley*" \$840,000, wrecked; "*Delhi*"—\$750,000, wrecked; "*Berge-dorf*"—\$700,000, wrecked; "*Papanui*"—\$500,000, burnt; "*Lusitania*"—\$500,000.00, wrecked; "*Halidan*"—\$500,000.00, wrecked; "*Russia*"—\$500,000, stranded and became c.t.l.; "*Herman Lerche*"—\$500,000, missing.

On the Pacific the "*Asia*", bound up from Hongkong to San Francisco was wrecked off the Chinese Coast entailing a loss of \$400,000. The "*Knight of St. George*" cost under-

writers \$250,000, while the stranding of the "*Empress of China*" is likely to result in a claim for average and salvage which may amount to \$500,000. The fleet of the Pacific Coast Company were particularly unfortunate as the following vessels were totally lost: "*Santa Rosa*," \$230,000; "*Cottage City*," \$120,000; "*Ramona*," \$100,000.

The stranding of the "*Spokane*" has resulted in a claim of 55 per cent on account. The steamer "*St. Denis*" was missing on a voyage from Vancouver to Salina Cruz. "*Tasman*" at 60 gs.; the "*Constanza*" and "*Fairport*" at 50 gs. before they reached port in safety. On vessels ashore the following rates were paid on steamers which were afterwards floated: "*Achilles*," 80 gs.; "*San Nicolas*," 80 gs.; "*Beachy*" and "*Empress of China*," 75 gs.; "*Geo. Player*" and "*Hillhouse*," 70 gs.; "*Greatham*," 60 gs.; "*Ben Lomond*" and "*Jacob Bright*," 50 gs. The "*Aotea*" and "*Russia*" were also floated but underwriters settled total losses on them.

As usual several notable salvages were successfully accomplished. Among these were the operations for saving the "*Russie*" and the "*Empress of China*," which were both ashore for nearly six months before they were eventually floated. Perhaps the most praiseworthy piece of work was accomplished by Captain Young of Liverpool, who in spite of exceptional difficulties was able to lift the large Cunarder "*Ivernia*" which was beached at Queens-town after striking Daunts Rocks and filled.

Salvage awards were rather less than usual. The "*Lowther Castle*" was awarded £10,500 for saving the "*Trieste*." Some Havre tugs received £6000 for services rendered to the "*Fuerst Bismarck*", ashore near Havre, and the "*Georgian*" was awarded a like amount for towing to port the "*British Sun*," which had broken down in mid-Atlantic.

An extraordinary feature of the year's losses was the fatality to towage risks which in the past have been considered fairly satisfactory risks. In September a floating dock valued at \$90,000 and a floating crane valued at \$135,000 both in tow for Mediterranean ports, foundered. In October two dredges, one valued at \$92,5000 and the other at \$120,000, broke adrift and sank; while in December a new dredger for the Port of London authorities, valued at \$220,000, broke loose and stranded on the Welsh Coast, becoming a total loss.

Fire was again the cause of some heavy losses. In addition to the "*Parisiana*" and "*Papanui*" mentioned above the "*Van Nek*" (\$270,000) was burnt at Macassar; the "*Ixion*" was destroyed off the coast of Sumatra with cargo valued at \$375,000, the hull being uninsured. The "*Maroni*" (\$250,000), was burnt at Point a Pitre. Five steamers which had serious fires without becoming total losses aggregated claims for \$500,000—the "*Iona*," "*Knight Companion*," "*Whitgift*," "*Lutzor*" and "*Wentworth*." Two fires at Buenos Aires in February and March are estimated to have resulted in damage amounting to \$2,000,000, while fires at Antwerp Docks in August and September destroyed goods worth \$2,500,000. There was also a cotton fire at Alexandria (Egypt), which cost \$500,000.

Owing to the severe gales which swept the English Channel and the Bay of Biscay incessantly from the month of October there were an unusual number of abandonments. In December alone something like a dozen steamers were either missing or reported to have foundered.

In the overdue market there were several arrivals after high rates had been paid. The "*Clan MacFarlane*" reached Antofagasta when the rate on her was 90 gs. and a



similar rate had been paid on the "Britannia" and the "Glenalloch" when both were reported safe. The "Nith" stood at 70 gs.

The tendency for large fire companies to buy up marine companies was further exemplified during the year. In June the Phoenix Company arranged to secure the shares of the Union Marine Company of Liverpool, while a little later the Liverpool London & Globe Company made an offer for the shares of the Thames & Mersey Marine Insurance Company. Both offers were exceptionally favorable and as was anticipated arrangements were carried through without any friction. At the close of the year it was announced that the World Marine Insurance Company had made an offer for the shares of the London & Provincial Marine Company. The effect of these amalgamations is of course that the company securing the shares has the benefit of a definite investment in what will probably be a rising security; that it has the control of larger funds and should competition in fire insurance become keener than at present it is in the position of having a powerful fighting instrument at its disposal.

Two marine companies with large reserve funds carried through exceedingly interesting financial transfers. The Marine Company arranged to transfer £420,000 from its reserve fund placing this amount as a bonus to the share capital, thus increasing its paid-up capital to £600,000. The result is to reduce the uncalled liability on the shares from £20 10s per share to £10 per share. In the case of the Sea Company the transfer from the reserve fund of £400,000 made the paid-up capital £500,000, leaving no further liability for shareholders.

Several changes took place during the year in the personnel of underwriting. In the spring, Mr. C. F. Jervis retired from the Thames & Mersey Company in London and was succeeded by Mr. E. S. Gedge. At the end of June, Mr. S. Kennard Davis, after a successful career as head of the Marine Department of the London Assurance Corporation, retired from business, being succeeded by his deputy, Mr. E. F. Nicholls. At the end of the year Mr. Akroyd Hyslop who had been underwriter of the Merchants Company for more than 20 years, retired and was succeeded by Mr. Wm. Irwin. Mr. Herbert E. Secreten, the underwriter of the London & Provincial Company since 1887, also retired on 31st December and was succeeded by Mr. G. G. Sharman, deputy of the World Company. In Liverpool Mr. J. D. R. Schoales, the underwriter of the Union Marine Company, retired and was elected to a seat on the Board.

Several well known names in underwriting circles have been removed by the hand of death. Some had actually retired from active participation in business and among these may be mentioned Messrs. Geo. Broomhead, Benjamin Mackinnon, Duncan Mackinnon, J. S. Burrows and David Willis. Younger members of Lloyds who have passed away were Messrs. E. B. Hampton, B. D. Mellor, A. W. Edwards and Harold Banting; while two others, Mr. Thomas Matheson, well known as a broker at Lloyds, and Mr. E. M. Hall, the underwriter in London for many years of the Canton & Triton Companies, died actually in harness after a long life.

#### FLEET RENEWALS.

There was an attempt last month to advance rates on steamers for time by 5%, and although it was strongly supported, three London Companies and one or two large syndicates at Lloyds refused to come into line and the proposal was abandoned. As soon as this was settled a very large amount of time business was thrown on the

market and underwriters have been exceptionally busy. Fleets which have shown a profit have been renewed without advance, but others have had to submit to increases which average about 10% on the rates paid last year.

The fleet of the Southern Pacific Company which has proved anything but profitable in the past, was renewed on terms which are considered favorable to owners. Last year the rates paid were 3% and 6%, with the usual purchase for claims. This year on the same values as last year the rates arranged are 2½% and 6%, but underwriters only pay the excess of \$2,500 on all claims. By eliminating a host of such claims which in the past have proved to aggregate a large amount per annum, it is hoped that the future results will be satisfactory. The fleet of the Eastern S. S. Co., with the values maintained, has been renewed at an advance of 10%—the new rates being 4% and 6% against 3½% and 5½% paid last year. The Dollar fleet pay rather over 10% more than last year, when the rates were 6% and 6½%. This year the renewal has been arranged at 7%, 7½% and 7¾%.

The American Mail fleet operating the "Admiral Dewey," "Admiral Schley" and "Admiral Farragut," which were covered last year at 8%, have been renewed at an advance of 2 guineas %, but the average clause has been reduced to \$5,000, or 3%, as against the ordinary 3% clause last year. The values, however, are increased from £40,000 each to £41,237 each.

The Brunswick S. S. Co. pay 10% more for the renewal, that is 3¾% instead of 3½% last year.

#### MARINE INSURANCE RATES.

The proposed increase on time risks of 10 per cent on tramp steamers and 5 per cent on liners, recently proposed in England and about which much has been written and said does not appear to have done much harm as yet, although it is stated from some sources that the increase is actually in effect while from other sources the statement is made that no increase has been obtained although undoubtedly asked for. Owners of the so-called tramps make a strong point that they are unjustly penalized in favor of the liners, and this is conceded by many of the underwriters. While it is admitted that the risk on the liners is much less than on the tramps, yet it is claimed and admitted that when a claim does materialize it is extremely heavy and that the rate charged, in comparison with that on the tramp, is not commensurate with the risks run and with the cost of repairs on the two classes of vessels.

One reason given for the failure to put into effect the proposed increase is that renewals for the year 1912 had been negotiated and bound prior to the agitation for the increase. Those owners therefore, who were far-sighted enough to bind renewals of lines running out the first of the year would have the advantage over owners less thoughtful and it is quite likely that underwriters, fearing to antagonize a good client, will grant to such the same rates as granted to others earlier in the game.

After all the marine insurance market is a very unreliable thing and an underwriter is apt to be governed more by his fear of losing a client or business than he is by the fear of final results. The illusion of hope is a dominant feature.

Meanwhile the local market is pursuing the even tenor of its way. There is no especial agitation and while losses in the past year have been heavy, in some fleets unusually heavy, yet companies and agencies admit some profit on the Pacific Coast business. Some figures will probably be available next month.

# The Yang-tsze Insurance Association, Ltd.

Head Office, Shanghai. Established 1862.

Capital, - - \$1,200,000 Reserve Fund, \$1,000,000

**Marine Insurance of Every Description.** Motor Boats Insured Against Fire and Marine Perils

E. H. HUTCHISON, Manager Seattle Branch, Mutual Life Building, Seattle

## C. I. F. Contracts

Reference in these columns was made last month to a decision recently handed down in England regarding ownership of goods under a c. i. f. contract of sale. This decision is of paramount importance to exporters and for the benefit of those interested a brief resume of the case is given.

It appears that the Horst Company, of San Francisco, contracted to sell to Vaux & Co., of Sunderland, England, a quantity of hops over a series of years, at a price c. i. f. to an English port, terms net cash, and the contract had been assigned to Biddell Bros. Over one of the shipments the question arose as to whether the purchaser should pay for the shipment on presentation of shipping documents, as was claimed by the seller, or only after arrival and examination of the hops, as was claimed by the buyers. No agreement being arrived at, the seller refused to make any more shipments and suit was brought by Biddell Bros. for damages and breach of contract. The Horst Co. claimed that the purchasers had violated the agreement in refusing to pay in accordance with the terms of the sale.

The Kings Bench Division, in which the suit was first brought, decided in favor of the defendants, the Horst Company, on the ground that the sellers under a c. i. f. contract had to put the goods on board, pay the freight, arrange for the insurance and pay for same and make out an invoice, tendering all documents to the purchasers. Having done this, delivery was completed and the purchaser must pay the amount of the invoice.

An appeal was taken by Biddell Bros. to the Court of Appeals, which Court, by a bare majority, overruled the decision of the lower Court, giving judgment to the plaintiffs. In giving this decision the majority of the Court apparently relied on two things, the absence in the contract of any express stipulation that the goods must be paid for on presentation of documents and that by common law right the purchaser was entitled to have the goods examined before payment could be demanded. It was claimed that frequently in contracts of this kind a stipulation that payment on presentation of documents was to be made was included, and that the absence of such stipulation in precise terms was a bar to such payment and that such a condition could not be read into the document, unless it could be proved that such settlements were so well established as to become a well known custom.

In the minority report of the Court of Appeals Lord Justice Kennedy upheld the decision of the lower court, and the House of Lords, to which tribunal the case was finally appealed, upheld the opinion of the Lord Justice, therefore the decision of the Kings Bench Division, final judgment going to the Horst Company.

A brief review of Lord Justice Kennedy's opinion is as follows:

Two forms of c. i. f. contract are in common use; one with the words "cost, freight, insurance, net cash," and the other with the words "cost, freight, and insurance net cash against documents." But there is no "contrariety" between the phrases, and it has never been suggested be-

fore this case that payment against documents was not the contract in each case, or that Lord Blackburn's opinion in "Ireland v. Livingston" to this effect did not apply to both forms. But, apart from all question of usage, the rules of the common law embodied in the Sale of Goods Act is decisive on the point. By these rules, delivery to the carrier is prima facie delivery to the purchaser; the goods are then at the purchaser's risk, and the property has passed to him. One more act is necessary to entitle the seller to payment, namely, tender of possession. But this tender of goods afloat under a c. i. f. contract is made by tender of the bill of lading, for the bill of lading, in law and in fact, represents the goods, and delivery of the bill of lading operates as a symbolical delivery of the goods. Thereupon the freight is payable.

Lord Justice Kennedy further showed the practical difficulty of any contrary rule making payment due only upon physical delivery and examination of the goods. It would entail the vendor either surrendering the bill of lading without payment, which would be "so unreasonable as to be absurd," as the bill of lading carries with it an absolute power of disposition; or the vendor must retain the bill of lading, himself land and take delivery of the goods, and himself store and warehouse the goods for such time as may elapse before the purchaser has an opportunity of examining and taking delivery. But this cannot be intended, as it would saddle the vendor with charges at the port of discharge, while under the c. i. f. terms the vendor has only undertaken to pay freight and insurance.

Lord Justice Kennedy applied a final test by considering the case of the goods being lost at sea, and the vendor tendering the bill of lading and the insurance policy. Was it arguable, he asked, that the purchaser could be heard to say that he would not pay because he could not have delivery of and an examination of the goods. The conclusion arrived at was that payment must be against the documents.

It is this judgment and these reasons which the House of Lords has now approved. The decision clearly settles the position of the parties to the c. i. f. contract. On presentation of the documents payment is due. If the goods on subsequent examination are found to be not in accordance with the contract, there is nothing to prevent the purchaser rejecting them or recovering damages, but this does not affect the original liability to pay for them on delivery—that is, on delivery by tender of the document.

In this country the law is well settled that, under similar contracts, the depositing of the documents in the mail is a delivery so far as the seller is concerned. How can it be otherwise? Take the situation as pointed out by Lord Justice Kennedy, that the goods be totally lost during transit. The purchaser having, as was claimed, the right of examination before payment and being denied examination by reason of the non-delivery of the goods, might refuse to pay for them and the only recourse the seller would have would be to sue for same as was done in this case. The seller could not recover under the insurance policy for by the terms of the c. i. f. contract, his title being lost on completion and mailing of the documents, the policy must be made in favor of the purchaser and the seller could have no right of recovery under the same. To make the insurance policy in favor of the seller or to joint interests of seller and purchaser would be directly opposed to the terms of a c. i. f. sale.

—R. B. H.

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### INTERNATIONAL ASSOCIATION OF UNDERWRITERS.

At Paris during the last week in November about 150 underwriters met to discuss certain clauses and to form an International Association of Marine Underwriters. In times past similar attempts have been made but the Association, through lack of coherence or proper direction, has failed to materialize.

At this last meeting, according to "Fairplay," the chairman explained the position as regards the excessive and unbearable additions underwriters had allowed to be made to their liabilities, after which he referred especially to the limitation clause at La Plata.

It would appear from the reports that reach us that under policies covering goods to South American ports underwriters have covered the shipments for a considerable period after landing and have included in their liabilities those of fire, flood, storm, theft, pilferage, etc., and it was with reference to these extraneous risks that reference was had. It appeared to be the consensus of opinion that liability under the policy should be limited to ten days after landing and during that time for fire only, although the French representatives expressed the fear that by such limitation they might lose some clients. The discussion of this important question took up all of the time of one forenoon, although it was decided that alter in the day a representative committee of all nations should meet and draft out and agree on a clause which should be discussed and eventually agreed by the Verband. From later reports it would appear that the exclusion of fire, flood, storm and pilferage from the accepted risks was agreed to. In the evening the delegates were entertained at a dinner.

Last month the Pacific Marine Review commented on the possibilities for the good of the marine underwriting profession of a well organized Association of Marine Underwriters of international scope, but it is to be feared that if greater progress both in the way of organization and of discussion of the evils that crop up is not made, the proposal of having such an Association meet at San Francisco in the Exposition year, 1915, will fail of fruition.

—R. B. H.

### THE OLYMPIC-HAWKE COLLISION.

Judgment has been pronounced in the cross-actions arising out of the collision which took place between the Atlantic liner Olympic and H. M. S. Hawke on September 20. The case came on before Sir Samuel Evans, the President of the Admiralty Division, sitting with two of the Elder Brethren of the Trinity House, on November 16, and its hearing lasted until the 28th, when judgment was reserved. All accidents in which the British Navy is involved are followed with interest; but in this case the fact that the colliding ship was the largest steamer in the world, and had some 2,200 persons on board at the time, attracted an unusual degree of attention. It is of some importance to recognize that the attention of the public has been drawn by this accident to the state of the law governing collisions. The importance lies in this: that

men's minds will be prepared for a change in the law, which there is reason to believe is likely to take place at no distant date. The President himself has foreshadowed it. While the Hawke-Olympic judgment was under consideration, in giving judgment in another collision case Sir Samuel Evans took occasion to remark that compulsory pilotage cases were very unsatisfactory, and that he for one would be glad when the law was altered. And he added that he did not think it would be very long before a change was made. That statement seemed to point also to the Hawke-Olympic case, in which the question of compulsory pilotage played a very great part. In brief, the judgment was that the Olympic was wholly to blame for the collision, that her owners failed in the action which they brought against the commanding officer of the Hawke, but that they succeeded in the cross-action brought against the Olympic, simply because they were able to set up a plea of compulsory pilotage. The standard text-book on the law of collisions at sea thus describes the effect of the existing law. "The pilot is not the servant or agent of the owner; and for a collision caused entirely by his negligence neither is the owner answerable at law nor the ship in Admiralty. In such a case the remedy of the injured person is against the pilot alone."

Although the points at issue in the cross-action were complicated, it is now possible, especially with the help of the President's extremely full and able criticism of the evidence, to give a convenient summary of what took place. The Olympic, displacing over 50,000 tons, was bound from Southampton to sea by the way of St. Helens. As she was making her turn to the westward in order to round the Bramble shoal, which obstructs the entrance to Southampton Water, she saw the cruiser Hawke coming up the western arm of the Solent. The Hawke, though those on board the Olympic could not be sure of the fact, was bound to Portsmouth. The two ships were, therefore, making passages the courses of which necessarily crossed, and the question at once arises whether, from the points at which they were when they first got sight of each other, it would have been possible for them to follow their proposed courses without coming into collision. The Olympic's pilot when he turned his ship to the eastward assumed that he could do so before the Hawke came up. In that case the Hawke in law would have ceased to be a crossing vessel, and would have become an overtaking vessel, whose duty it would have been to keep clear. But the pilot misjudged his distance, and by the time the Olympic had finished her turn the Hawke had drawn up to such a position that she could not be regarded as an overtaking vessel. The Olympic's case, therefore, which was based on the supposition that the Hawke was an overtaking ship, fell to the ground. The decision was that the two ships were crossing vessels within the meaning of the Act, and consequently that it was the duty of the Olympic, which had the Hawke on her starboard hand, to keep clear, the Olympic made no attempt to keep clear, and

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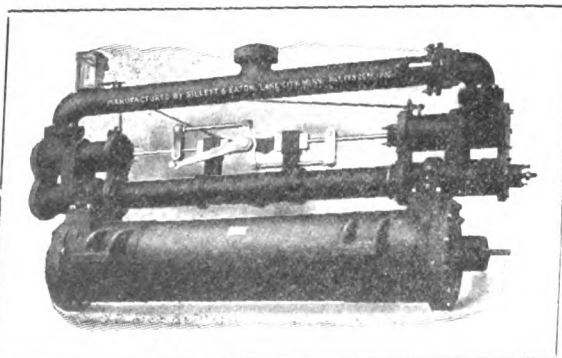
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by a manifestation of natural causes which is as yet very imperfectly appreciated, the Hawke was "sucked" into the liner. That this effect followed was due to more than one miscalculation on the part of those in charge of the Olympic. The Olympic, in fact, not only miscalculated the position, the course, and the speed of the Hawke; she also miscalculated her own position and her own speed, and even the evidence as to the Olympic's course was not altogether satisfactory. The actions, in fact, were decided chiefly on the evidence given by those on board the Hawke, which was clear and consistent throughout. But apart from questions of law and fact this case will have a permanent interest from the theory of "suction" which it introduced. By this term it is implied that in certain conditions, especially in close and shallow waters, one ship passing another close alongside sets up, or may set up, a disturbance in the water which is likely to interfere in an important degree with the steering of the ship which she is passing. When the theory was advanced that the "Hawke" had been acted upon in this manner it was at first received incredulously, for there has been little experience of this process in British waters. The theory, however, is by no means unknown in the United States, where the navigation of the Great Lakes provides some requisite conditions, "suction" is a well-established fact which has been taken into account in deciding many cases. The subject is of great interest and importance, and deserves still more attention.

As has been already suggested, this case is likely to be followed by at least one change in the law governing collisions. In order to make such a change it is not always necessary to pass an Act of Parliament; for by the provisions of the Merchant Shipping Act alterations or additions to the Law of the Rule of the Road at Sea are made by Order in Council on the demand of the Admiralty and the Board of Trade. The change foreshadowed, however, by the President in his judgment, does not come within the scope of an Order in Council. He stated that the Departmental Commission appointed to consider the question unanimously recommended the abolition of the owners' immunity in cases of compulsory pilotage. Of course if that recommendation had already been carried into effect the judgment in the action brought by the "Hawke" against the "Olympic" would have been entirely different from that which has been given, and the Admiralty would have been able to recover damages. In the existing state of the law it cannot do so, for the pecuniary liability of a pilot is limited by statute to the sum of one hundred pounds. It will be interesting, too, to see whether, at the time when changes are being made, any alteration will take place in the regulations for avoiding collision. There is, for instance, some demand for a revision of the orders concerning the lights to be borne by ships, in order to confer greater safety upon sailing ships, which occasionally suffer owing to their lights not being seen. And the rule by which a squadron or fleet in close order is not regarded as a single unit, but as a collection of independent units, for the purpose of obeying the rule of the road respecting crossing vessels, has for long seemed to many to be unsatisfactory.

### WRECKS, CASUALTIES AND MISCELLANEOUS REPORTS.

"KUMERIC," Br. S. S., from Victoria for China and Japan, returned to Victoria Dec. 15th with steering gear badly disabled.

"CITY OF PUEBLA," S. S., when off Partridge Point, Puget Sound, low pressure cylinder blew out injuring two men. The steamer was towed to Seattle where the cargo was discharged and forwarded. Cost of repairs about \$25,000. Vessel valued at about \$200,000, and insured in the San Francisco and foreign markets.

"CASCO," Str., from Columbia River for San Francisco with a cargo of lumber put back to Portland Dec. 20th, having struck a rock in the Columbia River and suffered considerable damage. Cargo was discharged to enable the vessel to go into drydock for repairs.

"FORT BRAGG," Str., from San Francisco Dec. 19th for Eureka, put back to San Francisco with heavy deck damage owing to heavy weather.

"FLAMINGO," Fishing Steamer, struck log Dec. 19th between Bella Bella and Swanson Bay which carried away the propeller and cracked the tail shaft. The steamer was towed into Vancouver where repairs will be made.

"WM. RENTON," Schr., at Salina Cruz Dec. 23rd from Eureka reports having lost part of deck load and some sails during heavy weather.

"CROWN OF ARRAGON," Br. S. S., from Antwerp for San Francisco, put into Falmouth, England, Dec. 23rd with deck damage caused by severe weather. She was subsequently taken to Bristol for repairs. Part of the cargo was found to be damaged and discharged.

"GRANT," Fishing Steamer, ran ashore on Bank Island, Hecate Strait, on Dec. 26th and will be a total loss. Vessel valued at about \$35,000 and was partly insured in the local market against total loss only.

"WM. NOTTINGHAM," Schr., before reported at Portland partially dismantled has discharged her cargo and tenders will be invited for repairs. The Port of Portland is holding the schooner and cargo subject to claim for salvage.

The C. P. R. S. S. Empress of China, which was wrecked off the Japanese coast, July 26, was floated Dec. 12. She had been abandoned to the underwriters, and the work of floating her was undertaken on their behalf by the London Salvage Association. It is said that repairs will be undertaken, a survey for the purpose of inviting tenders for the work having been made at Uraga, and that the contract will probably be placed with Japanese firms at Kawasaki or another firm at Hong Kong.

### IMPORTANT COLUMBIA RIVER BAR REPORT.

Captain Anderson, Am. S.S. "Tamalpais," reports to the Branch Hydrographic Office, Portland, Ore., that when he arrived off the Columbia River bar early Thursday, December 28, 1911, the bar was breaking badly as far out as the bell buoy. Within a very short time the bar was very smooth and he passed into the river. His experience and that of the bar pilots are in common and it is known among the pilots that this bar usually calms down between  $\frac{1}{2}$  and  $\frac{3}{4}$  of an hour before high tide and it is customary to wait for this time. When a severe blow is on, however, this calm period does not appear as at other times.

## A WIRELESS SHIP'S COMPASS.

The number of applications of the latest developments along this line is the use of electric waves for the purpose of indicating their bearings to vessels befogged at sea. The wireless compass is an invention of the Italian officers Bellini and Tosi, and a series of tests of its practical utility is to be made shortly near the French coast. From a number of points on the coast special signals are to be sent out by means of electric waves. This will enable the ships equipped with Bellini-Tosi compasses to determine the directions from which the signals proceed. The signal from each coast station is tuned to a separate frequency, and since in addition to this the signals correspond to different letters of the alphabet, the chances of one station being mistaken for another are practically nil. The compass is an instrument which, once its frequency is tuned for a given pitch, will indicate automatically, by means of a pointer, in what direction the signaling station lies, so that the observer can determine precisely the exact direction and position of the several stations, in spite of the thickest fog, and can thus find the bearings of the ship with absolute certainty.

## COMPASS EQUIPMENT OF THE IMPERATOR.

The directors of the Hamburg-American Line have decided that their new leviathan, the Imperator, shall be fitted with the Anschütz Gyroscopic compass. The installation will consist of: (1) The so-called "mother compass," which will be placed practically in the center of the gigantic hull. As the compass is, of course, not affected by magnetic power, but only by the revolutions of the earth on its axis, no heed is paid in its setting to the proximity of masses of steel or of electrical machines. (2) Two motor generators. (3) Four "daughter compasses." The latter will be distributed over various parts of the ship, so as to serve as azimuth and steering compasses, and two of them will be so constituted that observations can be taken around the complete horizon. All four of the daughter compasses will constantly show the same direction as the mother compass. The Hamburg-American Line is thus the first mercantile concern to adopt the Anschütz Gyroscopic compass, about fifty of which, however, are already in use on board warships belonging to England, Germany and other nations.

## TELEPHONING THROUGH WATER WITHOUT WIRES.

Exhaustive tests have recently been made by Mr. A. W. Sharman with instruments invented by him for telephoning through water without wires. The microphone used in speaking is connected in series with a battery of four or five dry cells and an impulse coil, the coil being of special construction and giving very short, induced currents of high potential, which are communicated to the water by two wires connected to the terminals of the coil and terminating in plates buried in the sand or submerged in the water. Two similar plates, connected direct with a very low-resistance telephone receiver, enable the speech to be "picked up" at distances of a mile and more.

The speech transmitted through the water has been very distinct, and the system has shown good possibilities for use as a means of verbal communication between two ships, such as battleship and a submarine. The effect is very directional, and another advantage is that with a small tuned buzzer telegraphic signals can be transmitted through the earth or water for a distance of several miles. The primary energy required is extremely small, 4 watts sufficing to telephone over a distance of 2 miles.

## Wireless Record For Estevan

For the first time since the wireless stations were established on the west coast of Vancouver Island by the Dominion government one of the operators has been successful in speaking with Honolulu. The high power station at Estevan was recently in communication with the Honolulu port, and the messages were quite audible. The operators extended greetings and hoped to obtain another long distance talk in the near future. The wireless apparatus at Estevan is looked upon as the most powerful on the coast. It has picked up the Oriental steamships bound for Victoria when 2,000 miles at sea, and is in nearly every instance the first station on the Pacific Coast to get into communication with any of the vessels en route to British Columbia ports. It is very seldom that any of the American stations on the Pacific Coast can speak with Honolulu. The distance from Estevan to Honolulu is approximately 2,500 miles, and the long distance talking demonstrated the power of the station. To shipping men of Victoria and Vancouver the Estevan wireless station is of inestimable value.

The Pacific Mail Steamship Co. has been given the assurance of the Japanese authorities that overcarried cargo may be returned on any of the vessels operated by that company. This assurance had previously been given to some of the British steamship lines.

Inasmuch as the Japanese procedure has required the return of overcarried cargo in the same vessel in which it was carried beyond its destination, this is deemed a matter of considerable importance to the shipping companies.

## SEATTLE'S PORT WARDEN'S REPORT FOR DECEMBER, 1911.

DECEMBER, 1911.			
Deep Sea Vessels.			
Arrivals.		Number.	Net Tonnage.
Steam .....		123	261,625
Sail .....		9	19,770
		<hr/> 132	<hr/> 281,395
Departures.			
Steam .....		118	247,202
Sail .....		7	18,281
		<hr/> 125	<hr/> 265,483
Passengers.			
From and To—		Inbound.	Outbound.
Foreign and British Columbia .....		4,996	5,096
Coastwise and Alaska .....		1,477	2,592
Local points .....		95,817	95,727
		<hr/> 102,290	<hr/> 103,415
Imports.			
From coastwise points—			
Cement .....	1,431 Ton	11,162	
Mdse. ....	55,540 Ton	1,253,235	
		<hr/>	\$1,136,397
From Alaska points—			
Mdse. ....	4,204 Ton	125,524	
Salmon .....	17,967 Cs.	73,344	
		<hr/>	198,868
From local points—			
Logs .....	9,199,578 Ft.	72,012	
Mdse. ....	10,273 Ton	799,530	
		<hr/>	871,542
From the Philippines—			
Hemp .....	1,013 Bales	14,757	
Mdse. ....	375 Ton	5,480	
		<hr/>	20,237
From Pacific Ocean—			
Halibut .....	609,000 Lbs.	53,014	53,014
		<hr/>	
Total value domestic imports.....			\$2,280,058
From British Columbia—			
Coal .....	5,462 Ton	29,560	
Canned goods .....	2,009 Cs.	8,036	
Lime .....	1,100 Bbl.	1,400	
Liquors .....	596 Cs.	6,546	
Mdse. ....	1,276 Ton	125,260	
		<hr/>	170,802

<b>From Australia—</b>		
E. Ware .....	5 Cs.	245
Mdse. ....	124 Ton	15,354

<b>From Germany—</b>		
Linoleum .....	20 Bales	727
Liquors .....	33 Cs.	599
Mdse. ....	600 Ton	17,375
Steel .....	904 Bcls.	1,086

<b>From France—</b>		
Liquors .....	201 Cs.	2,458
Mdse. ....	3 Ton	5,095
Olive oil .....	123 Cs.	4,694

<b>From Ireland—</b>		
Linens .....	1 Cs.	349
Liquors .....	100 Ton	421

<b>From England—</b>		
E. Ware .....	7 Cs.	432
Fire brick .....	455 M	4,484
Fire clay .....	100 Ton	175
Liquors .....	188 Cs.	2,835
Mdse. ....	1,660 Ton	35,672

<b>From Norway—</b>		
Mdse. ....	12 Ton	2,125
Sardines .....	633 Cs.	4,190

<b>From South America—</b>		
Coffee .....	301 Bags	7,590
Mdse. ....	5 Ton	1,300

<b>From the Orient—</b>		
Braid .....	628 Bales	35,315
Brushes .....	99 Bxs.	8,775
Bamboo .....	2,122 Bcls.	5,474
Camphor .....	490 Tubs	30,907
Curios .....	916 Cs.	19,528
Linen goods .....	60 Cs.	19,084
Matting .....	5,571 Bales	21,320
Raw silk .....	2,303 Bales	958,100
Rice .....	7,099 Bags	25,040
Silk goods .....	121 Cs.	55,453
Tea .....	10,030 Mats	90,408
		1,485,329

Total value foreign imports ..... \$1,763,337

<b>Exports.</b>	
Coastwise points .....	\$ 553,116
To the Philippines .....	328,560
To Hawaiian Islands .....	194,589
To local points .....	636,494
To New York .....	347,978
To Alaska .....	499,337

<b>Total value domestic exports .....</b>		<b>\$2,560,074</b>
To British Columbia .....	\$ 519,325	
To the Orient .....	1,475,364	
To England .....	288,556	
To Germany .....	16,919	
To South America .....	102,060	
To Australia .....	10,235	
To France .....	500	

Total value foreign exports ..... \$2,412,959

#### COMMERCIAL MOVEMENTS AT PORTLAND.

(Compiled by Merchants Exchange.)

##### Lumber Exports from Portland.

December.		Since January 1, 1911.	
		(Foreign)	
Feet.	Value.	Feet.	Value.
4,992,446	\$ 48,185	77,325,209	\$ 875,756
		(Domestic)	
13,620,000	\$ 156,630	136,168,187	\$1,445,345

##### Wheat Exports from Portland.

December.		Since January 1, 1911.	
		(Foreign)	
Bushels.	Value.	Bushels.	Value.
1,158,229	\$1,218,932	7,718,861	\$6,529,442
		(Domestic)	
195,317	\$ 160,160	3,143,763	\$2,666,919

##### Flour Exports from Portland.

December.		Since January 1, 1911.	
		(Foreign)	
Barrels.	Value.	Barrels.	Value.
57,000	\$ 225,000	741,079	\$2,721,170
		(Domestic)	
28,712	\$ 129,155	339,673	\$1,461,568

##### Tonnage Entered at Portland.

December 1911	77 vessels	106,921 tons
December 1910	62 vessels	95,873 tons

##### Tonnage Cleared from Portland.

December 1911	79 vessels	108,669 tons
December 1910	69 vessels	113,584 tons

##### Principal Domestic Imports at Portland by Water.

December.		Since January 1, 1911.	
Asphaltum, barrels.....	3,719		124,099
Canned Goods, cases.....	31,508		227,966
Cement, sacks .....	208,710		4,632,853
Coffee, sacks .....	1,438		21,518
Electrical Goods, pkgs....	2,237		16,779
Hardware, tons .....	3,073		16,132
Iron, pkgs. ....	4,939		165,653
Machinery, pkgs. ....	784		5,957
Merchandise, tons .....	2,160		40,561
Miscellaneous, pkgs. ....	18,854		457,254
Oil, barrels .....	395,958		4,218,101
Paints and Oils, pkgs....	2,144		80,294
Plaster, sacks .....	5,031		97,612
Salmon, cases .....	2,059		50,365
Salt, sacks .....	16,385		212,081
Sash and Doors, pkgs....			21,163
Sugar, sacks .....	59,258		638,862
Sulphur, sacks .....	1,573		11,679
Tobacco, pkgs. ....	821		71,311

##### Principal Foreign Imports at Portland.

December.		Since January 1, 1911.	
Cement, barrels .....			9,825
Coal, tons .....	1,159		14,735
Curios and Mdse., pkgs....	1,560		24,713
Firebrick, tons .....	544		4,278
Hardwood, feet .....	25,266		5,455,249
Hemp, bales .....	610		10,436
Iron, pkgs. ....			59,970
Provisions, pkgs. ....	839		29,636
Rice, sacks .....	260		24,152
Sulphur, tons .....	319		5,264
Tea, pkgs. ....			5,066

##### ESTIMATED PACK OF ALASKA SALMON. Season 1911.

Grades—	Talls.	Flats.	8 doz. to case.		Total
			Halves.	Cases.	
King .....	45,177	29	142	45,348	
Reds .....	1,269,800	34,335	15,956	1,320,091	
Medium Reds ....	117,097	11,075	1,578	129,750	
Pinks .....	1,013,291	10,012	4,895	1,028,198	
Chums .....	293,946	510	3,474	297,930	
Totals .....	2,739,311	55,961	26,045	2,821,317	
Approximate value 1911 pack, \$14,830,932.00.					

##### ESTIMATED PACK OF PUGET SOUND SALMON. Season 1911.

Grades—	Talls.	Flats.	8 doz. to case.		Total
			Halves.	Cases.	
Sockeyes .....	42,606	29,651	68,272	140,529	
Cohoos .....	182,718	21,707	36,783	244,208	
P. S's. Pinks .....	939,221	56,852	42,063	1,038,136	
Chums .....	101,257	698	9,188	111,143	
Totals .....	1,265,802	111,908	156,306	1,543,016	

The Red Spring pack, amounting to 12,579 cases, we have included in Sockeye figures.

Puget Sound Pinks run biennially. Due again 1913.

Approximate value 1911 pack, \$7,506,300.20.

##### COMPARATIVE PACKS.

	1911.	1910.	1909.	1908.
Sockeyes .....	140,529	231,437	1,005,120	162,228
Cohoos .....	244,208	151,077	139,297	95,863
P. S's. Pinks .....	1,038,136		365,156	
Chums .....	111,143	148,810	52,251	51,186
Totals .....	1,534,016	537,324	1,561,824	309,277

We are indebted to Kelly-Clarke Co., Seattle for the above statistics.



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The "Song of the Rail" is a charming one sung by this luxurious home on wheels.

Your Compartment or Drawingroom is the acme of coziness—the Observation Car invites to a delightful hour with nature—the Dining Car adds a crowning pleasure.

Leave Portland 7:00 pm., Tacoma 7:00 pm., Seattle 7:10 pm., arrive Minneapolis 7:30 am. St. Paul 7:55 am., on the third day. Immediate connection with fast trains to Chicago and East.

A magnificent trip over the Scenic Highway through the Land of Fortune. Several other daily transcontinental flyers—one through to Chicago, and one through to St. Louis.

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## Annual Reports of Progress From Advertisers

### In Pacific Marine Review

The subjoined reports of progress have been received from some of our advertisers, which denote the volume of business transacted during the past year and the indications for the year 1912.

Safety Car Heating & Lighting Company, 2 Rector St., New York, report as follows:

"The volume of business done by this company for the fiscal year of 1911 in buoys and beacons, etc., has been about normal. The prospects for the forthcoming year are bright. The developments we now have in hand and those that have already proven satisfactory are of such a nature as to warrant the confidence of those interested in harbor and river buoys and beacons, in the fact that this company aims to produce the best and most efficient lighting for protection to navigation. The service obtained from the Pintsch buoy mantle, now being supplied with all our buoys and beacons, is fully up to our expectations. The improvements made in lanterns, the excellent quality of our lenses, the mechanical construction of revolving lense mechanism, the developments made by us in submarine bells operated by Pintsch gas, and several other equally desirable improvements, we expect will keep us in the front ranks in the field of light-house equipment."

Johnson & Higgins, Average Adjusters and Insurance Brokers, report from their New York office:

"As regards the general prospects for the year 1912, our opinion would, we think, be of very little value. Generally, we think we can predict that within the next two or three years the shipping business on the Pacific Coast is going to make considerable advance. You have, no doubt, already noticed this coming yourself."

The Canadian-Australian Royal Mail Line, under the signature of J. C. Irons, Asst. Gen. Agent, Vancouver, B. C. writes us:

"We have pleasure in stating that our business has increased considerably during 1911, and been much steadier than in previous years. The prospects look good for further developments during 1912."

Mitsui & Co. send the following report from their San Francisco office:

"In compliance with your request, we are pleased to say that we, on the Pacific Coast, including our Portland office, were fortunate enough to enjoy much more prosperous business during this year than the year preceding."

Sheriffs Mfg. Co., Milwaukee, Wis., Manufacturers of Propeller Wheels and Marine Machinery, write:

"We have no detail report to make but merely wish to state that the past two or three years in the marine line on the Lakes have been very much below the usual standard, and while there is a general depression in business, we think that the marine interests on the Great Lakes have suffered more severely and we do not see anything encouraging for the new year."

The Almy Water Tube Boiler Co., Providence, R. I., report:

"We have on hand and in vessels under construction—Two boilers for steam yacht building at The Pusey & Jones Co., Wilmington, Del., for Mr. F. C. Fletcher; Two boilers for steam yacht "Florence" (formerly "Czarina") of Toronto, Ont.; One boiler for steamer "Sylvia" of Springfield, Mass.; One boiler for fishing tug at Anacortes, Wn.; One boiler for steam yacht "Ellide," Lake George, N. Y.; In addition to the above, since December, 1910, we have furnished twenty-four boilers for fifteen vessels."

Messrs. Gillett-Eaton and Squire, Builders of Stern Wheel Steamboat Engines, Founders and Machinists, Lake City, Minn., report:

"We have in the past year built eight sets of Gillett & Eaton Sternwheel Steamboat Engines, five of these sets being installed on U. S. Government boats. The prospects for the coming year are bright and we believe will bring us a larger amount of Government work than any year heretofore."

The Seattle Construction & Drydock Company, Seattle, send us the following report:

"During the year 1911 the Seattle Construction & Drydock Company, successors to The Moran Company, built and launched two steel steam whalers of the most up-to-date design, built and launched a Caisson for Drydock No. 2, Navy Yard, Puget Sound, Wash. Two Submarine Torpedo Boats were launched, known as "F-3" and "F-4."

"Orders have also been received, and work under progress, on five more steel whalers of various sizes, a large passenger steamer for the Inland Navigation Company, two additional Submarine Torpedo Boats for the U. S. Government."

"Besides the above new construction, extensive repairs were made to the S. S. "Chicago," the S. S. "Seward," the S. S. "Hyades," and work is well under way on the S. S. "Victoria".

"There were put in drydock for cleaning, painting and miscellaneous repairs during the year, about 150 vessels of various sizes.

"In addition to the above outline of Marine work, there were built retorts, storage tanks, bridges, structural steel fabricated for various buildings, stamp mills, mining machinery, boilers, engines, Weeks' Two Line Shovel, a busy iron and brass foundry, the sawmill carried on in continuous operation, and other miscellaneous work."

The Coast Steamship Company, Ltd., 530 Seymour St., Vancouver, B. C., report:

"We are pleased to advise that we are operating the "Clansman" and the "Fingal" in the general freighting business, each carrying about 100 tons, between local B. C. points and also to Seattle and Tacoma, in connection with four other boats. We are also operating the "Celtic", carrying 300 tons to Rupert and all Northern B. C. way ports. The "British Columbia", carrying 800 tons, is in operation between Vancouver, Prince Rupert and way ports, frequently going to Ketchikan, Alaska."

We have received the following report from H. E. Moore, general freight and passenger agent of the Tehuantepec National Railway Company, Rincon, Antonio, Mexico:

"Our business during the past year has been very satisfactory, and we have successfully handled traffic largely in excess of the movement via this route for the year 1910.

"It is rather early to speak with authority regarding business which may be secured next year, our east bound traffic being largely dependent upon crop conditions in Mexico, Central America, Hawaiian Islands, California, etc., on the salmon pack and upon other conditions which may not be foretold at the present. Everything considered, however, we believe that the prospects for the Tehuantepec Route for the year 1912 are most favorable.

"Our present steamship connections, seventeen in number, are giving a total of practically sixty calls per month at our two ports under regular schedules and fixed itineraries. Further extensions of service in connection with this route are contemplated for 1912, advices of which will be sent you in due course."



The Polson Iron Works, Ltd., Toronto, Canada, writes: "Business has been rather slack during the last six months of this present year. The prospects for the coming year are exceedingly good. The principal work we will have on our hands covering the next six months, will be the building of our steel floating dry dock."

#### LEGAL DECISIONS.

##### Seaworthiness of Vessel.

Shipowners too frequently are prone to think that because their steamer has passed the annual inspection by proper authorities and by the surveyors to the Classification book in which the vessel is rated and that it holds the highest rating given in that book that the vessel is seaworthy for all purposes and that question cannot be raised. To such a perusal of the decision, digest of which is taken from the Federal Reporter and given herewith, is recommended. Too much care cannot be taken in making a vessel seaworthy in every respect before commencing a voyage, and the owner who relies entirely on the annual inspection and the certificate of class may find himself penalized heavily for some little oversight or neglect.

##### The Indrapura.

(Circuit Court of Appeals, Ninth Circuit. Oct. 16, 1911.)

1.—**Shipping—Seaworthiness of Vessel—Method of Construction.** While, in determining whether or not the construction of a vessel rendered her unseaworthy, it is proper to consider evidence of the usual custom of shipowners and the usual method of construction of ships and their appliances, such evidence is not necessarily conclusive, and should be considered in the light of what would appear to be the prudent method of construction, and may be rejected entirely where the construction is obviously defective.

2. **Appeal and Error—Review—Findings—Seaworthiness of Vessel.** A finding that the placing of the filling pipe extending from the engine room to the trimming tank in the forepeak of a steamship upon the floor of the intermediate hold, boxed in, without a valve within or immediately without the tank to shut off the water in the tank from the pipe in case of a break in the pipe to prevent the flooding of the hold, rendered the vessel unseaworthy as to cargo in such hold, will not be reversed by an appellate court where there was expert testimony that such construction was faulty.

3. **Shipping—Liability of Vessel for Injury to Cargo—Seaworthiness.** The fact of the breaking of one of the sections of cash-iron pipe extending from the engine room of a steamship to a tank in the forepeak along the floor of the hold, allowing water to escape into the hold and injure the cargo therein, in the absence of evidence to the contrary, authorizes an inference that the ship was unseaworthy as to the cargo placed in the hold at the beginning of the voyage, by reason either of defects in the pipe or the boxing, and the burden rests upon the vessel to overcome such inference.

4. **Shipping—Carriage of Goods—Implied Warranty of Seaworthiness.** In every contract for the carriage of goods by sea, in the absence of agreement otherwise, there is an absolute implied warranty that the ship is seaworthy at the time of the beginning of her voyage, and reasonably fit to encounter the ordinary perils to be expected, and her liability for loss or injury to cargo from a latent defect in vessel or appliances is not affected by the Harter act (Act Feb. 13, 1893, c. 105, 27 Stat. 445, U. S. Comp. St. 1901 p. 2946).

#### SUPREME COURT RULING ASKED ON SAN FRANCISCO PILOTAGE CASE.

Attorney General Webb has asked the United States supreme court to give an early decision in the case in the conflict of jurisdiction between state and federal governments as to the pilotage on steam vessels entering the Golden Gate. It was pointed out by Mr. Webb that the case not only involved vessels now engaged in traffic, but many "confidently expected" to use the Panama canal and unless advanced the case would not be decided until after the completion of the canal.

#### CAPTAIN CHAS. BAILEY HONORED.

In recognition of Captain Charles T. Bailey's bravery and rare skill of seamanship exhibited while in command of the Puget Sound Tug Boat Company's Tug "Tatoosh," during the successful rescue of the seriously endangered 48 lives on board of the Steam Schooner "Washington," saving this vessel from total destruction under exceedingly trying circumstances on November 13th, 1911, off Peacock Spit, the citizens of Seattle, consisting of business men and those of the shipping fraternity, including members of the Merchants' Exchange, presented the daring skipper, in the hall of the Exchange, with an approximately designed gold medal, in addition to a well-worded resolution by the Merchants' Exchange during the afternoon of January 9th.

Mr. E. C. Hughes, the attorney of the Puget Sound Tug Boat Company, a life-long friend of Captain Bailey, eulogized the Captain in an eloquent address, deeply touching the heart strings of the skipper and all those present, causing repeated applause. It was indeed a well-deserved recognition which will never be forgotten by Captain Bailey, of whom Seattle and his multitude of friends and admirers is justly proud.

T. W. Larke, who for some time past has been North Pacific Coast Passenger Agent for the International Mercantile Marine Company Lines, comprising the American Line, Atlantic Transport Line, Dominion Line, Leyland Line, Red Star Line, White Star Line and White Star Dominion Line, has been appointed Pacific Coast Passenger Agent, with headquarters at San Francisco.

Mr. A. E. Disney, late of Chicago, has been announced as Mr. Larke's successor, with offices in the Bailey Building, Seattle.

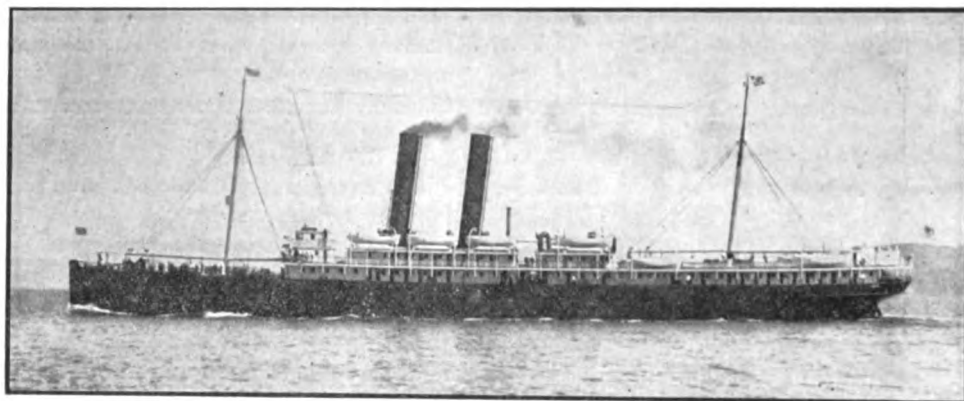
The Matson Navigation Company has discontinued its passenger service from Seattle to the Hawaiian islands and is now running the "Hilonian" and "Hyades" in this service, the "Honolulan" being put on the San Francisco-Honolulu run. The S. S. Hyades is the next steamer sailing for the Islands on or about January 27th.



Anyone sending a sketch and description may quickly ascertain our opinion free whether an invention is probably patentable. Communications strictly confidential. **HANDBOOK** on Patents sent free. Oldest agency for securing patents. Patents taken through Munn & Co. receive special notice, without charge, in the

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## ATLANTIC FLEET

- S. S. "AMERICAN"—8,000 tons.  
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 S. S. "HAWAIIAN"—8,000 tons.  
 S. S. "OREGONIAN"—8,000 tons.  
 S. S. "TEXAN"—12,000 tons, twin screw.  
 S. S. "GEORGIAN"—8,000 tons.  
 S. S. "KENTUCKIAN"—8,000 tons.

Operating the following

## PACIFIC FLEET

- S. S. "ALASKAN"—12,000 tons, twin screw.  
 S. S. "ARIZONAN"—12,000 tons, twin screw.  
 S. S. "COLUMBIAN"—12,000 tons, twin screw.  
 S. S. "MEXICAN"—12,000 tons, twin screw.  
 S. S. "MISSOURIAN"—12,000 tons, twin screw.  
 S. S. "VIRGINIAN"—12,000 tons, twin screw.  
 S. S. "ISTHMIAN"—6,000 tons.  
 S. S. "NEBRASKAN"—6,000 tons, twin screw.  
 S. S. "NEVADAN"—6,000 tons, twin screw.  
 S. S. "FALCON"—2,500 tons, (chartered)  
 S. S. "HONOLULAN"—8,000 tons.

All Steamers owned by the Company are fitted with the Clayton Fire Extinguishing Apparatus

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To regular ports of call in Orient, including Manila. Freight forwarded to Siberia, Korea and East Indian ports and to Chinese and Korean ports and Vladivostock by its own line of connecting steamers from Japan.

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Steamers: "British Columbia," "Celtic," "Fingal" and "Clansman"

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First-class service from Vancouver and Seattle to Eastern Canadian and United States cities, and to Europe. Sleeping car service Vancouver to Montreal and Boston without change. Seattle to St. Paul without change. Direct connections for Chicago, St. Louis, the middle west and south.

S. S. PRINCESS MAY will leave Vancouver for Southeastern Alaska on November 18th, December 2, 14 and 30, January 13 and 27.

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Leave Vancouver every twenty-eight days for Honolulu, Suva, Brisbane and Sydney with connections at Suva and Sydney for New Zealand.

Steamships "MAKURA," "MARAMA" and "ZEALANDIA," fast, splendid and handsomely equipped. Steamships call at Victoria, B. C., in both directions.

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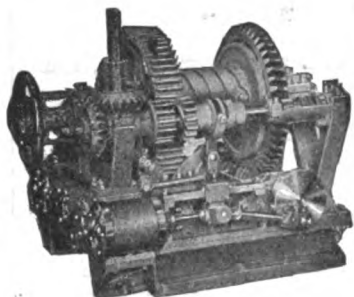
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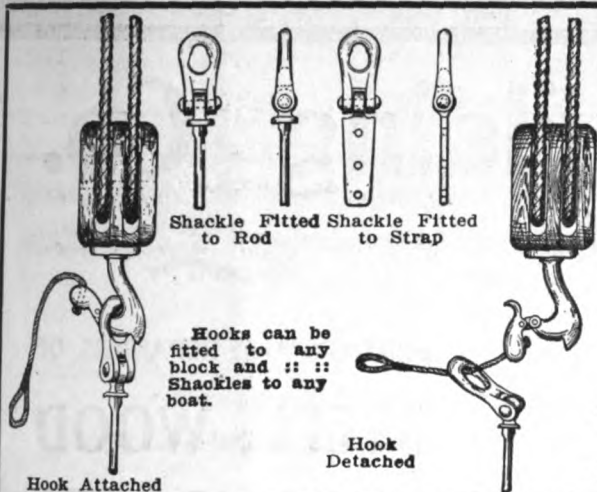
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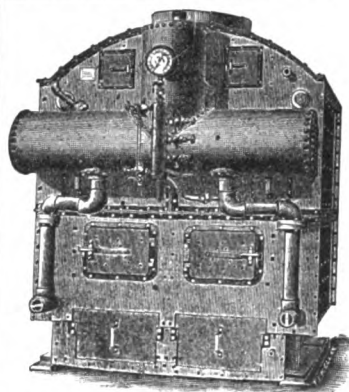
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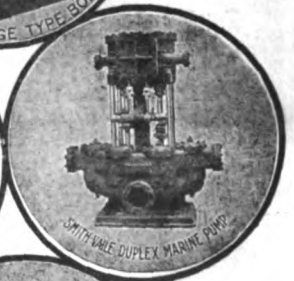
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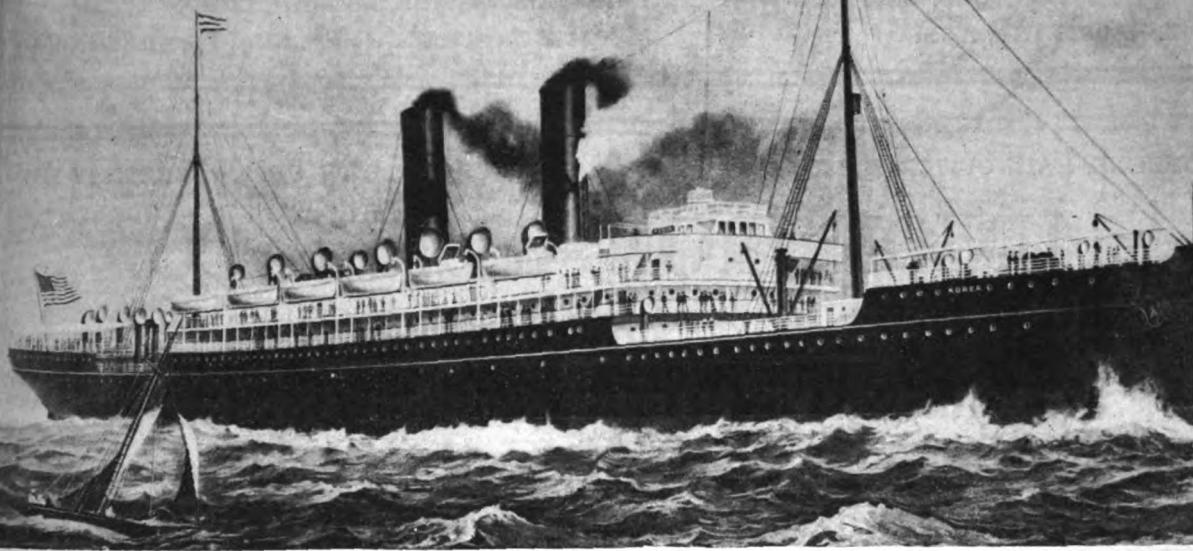
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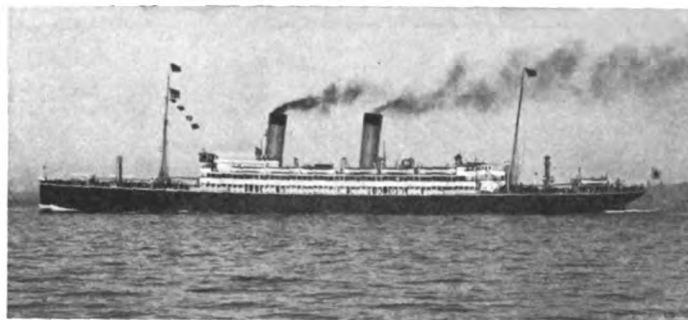
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# PACIFIC MARINE REVIEW

VOL. IX.

SEATTLE, WASH., U. S. A., FEBRUARY, 1912.

NO. 2

## AN OPPORTUNITY FOR PORT IMPROVEMENTS

SEATTLE, the foremost port of the State of Washington, which embodies the most magnificent unobstructed approaches to Straits, Sounds and natural canals for deep water navigation, possessing maritime possibilities incomparable with any harbor of the United States and none in the world even similar, has never before been confronted with more vital and important questions in relation to port developments. The possibility of transforming Harbor Island, a part of the City of Seattle, into modern terminals offered to be constructed by Eastern capitalists, on principles similar to the Bush Terminal Company of New York, is of obligatory and most intrinsic value to Seattle's future development.

With all due respect to the Port Commission and their plans for improvements, concerning which an article appeared in Pacific Marine Review's January issue, with our suggestions, it has already been sufficiently discussed from other view points, and to go into further details, urging some change of and deviation from present plans, we can but strongly recommend the acceptance, without further hesitation, of those by this New York syndicate, and to consider that the elimination of the improvements proposed by the Port Commission on the East Waterway, calling for an expenditure of approximately \$1,000,000, could and should now be waived, since the plans similar to those of the Bush Terminal Company, with its large and excellent trade connections all over the country and foreign countries, is without a question of a doubt not only superior to any one submitted so far, but surpasses all future prospects for the port and city of Seattle, which, comparatively speaking, not every one can realize at present.

To scatter docking facilities in various units, to remote and disconnected sections, may be acceptable from local business points of view, but for through traffic, with which we have principally to contend with and will no doubt to a larger extent in the future, it is imperative to concentrate these facilities.

Seattle's development as a city in the approximately five decades of its existence stands unparalleled, its remarkable growth and modern improvements are a marvel and the strides its citizens have made have not only attracted large business interests, but have won the admiration of all who have visited the present metropolis of the Northwest.

Port improvements have in no way kept pace with internal and perhaps not over productive developments, the former of which have practically been as stagnant as the maritime progress of our nation is and has been for decades past, due to injudicious legislation.

Has it not been sufficiently proven that we are in need of manufacturing industries, import and export houses? Is it not a natural consequence that such would follow in a short time the warehouse system?

The nation at large is confronted with the solving of one of the most difficult maritime problems in its history, the toll issue of our magnificent ocean highway, the Panama Canal, the near completion of which is viewed from every angle of the globe by all trading nations, and the result of a toll issue favorable to American shipping will eventually lead to a large extent rehabilitate our shamefully neglected merchant marine. The large sums other Pacific Coast ports have appropriated for the expenditure of modern and

extensive facilities for the increase of domestic shipping, as well as foreign shipping to come to our shores in the near future, should in view of such prospects certainly spur all and every one to double activity in accomplishing that which is due to the foremost port of the Pacific Northwest.

It is no small compliment these Eastern capitalists, consisting of business men of repute and standing, are paying to Seattle in their eagerness to locate on Harbor Island. All petty grievances and arguments should be waved and a decision in this important question, on which the future success and prominence of Seattle, as one if not the best fitted port in the United States, depends, to bring to its harbor the activity and connection of a corporation on principles of the Bush Terminal Company, which in itself is indeed no small asset and should therefore be accepted unanimously.

On the other hand, can Seattle as a shipping port continue unless it takes firm hold of what it is offered? The Bush Terminal Company of New York has sufficiently demonstrated its efficiency, its connections have proven overwhelmingly beneficial and their transactions in creating both business as well as increasing transportation can rightly be considered from every view point supreme.

The president of the new terminal company will be R. F. Ayers, formerly vice-president of the Bush Terminal Company, which is known as the largest industrial corporation of its kind in the world, and from which position he has now resigned in favor of the new corporation.

It must be thoroughly understood, however, that neither the Bush Terminal Company nor its president, Mr. Irving T. Bush, have any interest whatever in the new corporation, but it is quite feasible that a mutual traffic agreement may be entered into, which unquestionably would be an advantage in producing business for both.

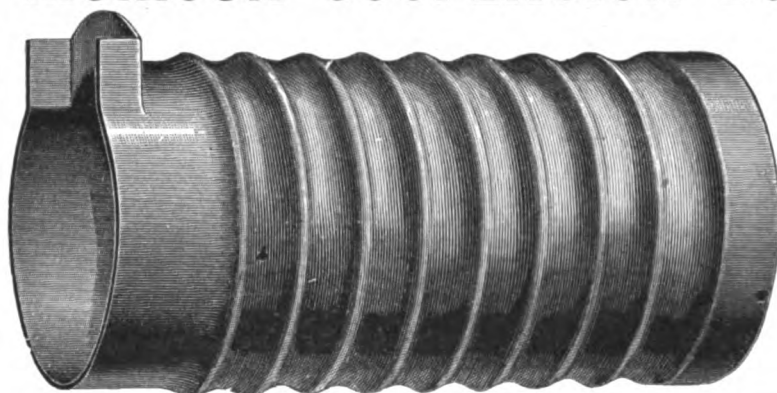
That which appears slow work in a public and official way is quickly done by the efforts of high spirited citizens. The terminal plan proposed will not pass into idle ears, not through inattentive minds and out through idle ears unheeded. This is Seattle's opportunity, and Seattle is particularly well equipped to take advantage of this opportunity at the earliest possible moment.

In concluding, we reproduce the plan of the Terminal Company in somewhat condensed form.

"It is proposed to establish on Harbor Island, in Elliott Bay, manufacturing and shipping terminals similar in every respect to the world famous Bush Terminals, involving the immediate expenditure of \$2,575,000 of Eastern capital in constructing the terminals, co-incident with the expenditure of \$5,000,000 for acquiring the site and building six large concrete docks, 1,400 feet long, 150 feet wide, equipped with modern machinery for the rapid handling of freight. The people of the port district are to vote \$3,000,000 in bonds on March 5th next. Of this sum \$2,000,000 is for the condemnation and acquirement of 147.67 acres of land on Harbor Island for the site. The other \$1,000,000 is for the immediate construction of two large piers of above dimensions. An additional \$1,000,000 is to be voted next fall for two more such docks and the following spring \$1,000,000 for two more docks, or \$5,000,000 in all for the site and six big piers. The company is to expend \$2,575,000 immediately in the construction of industrial and manufac-



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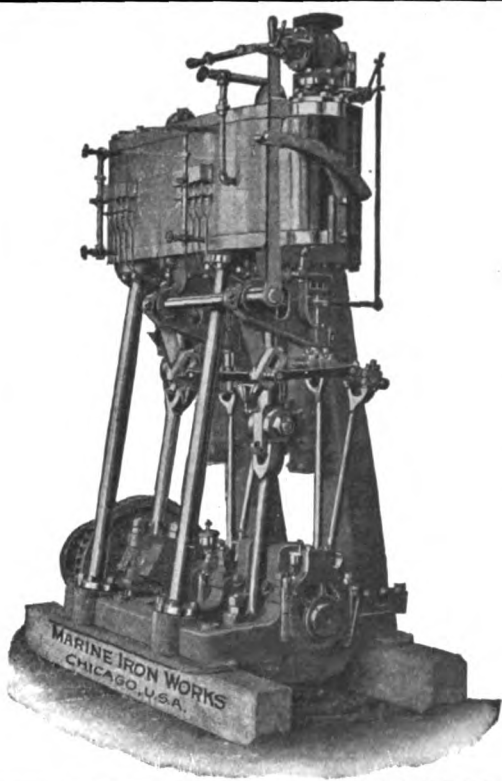
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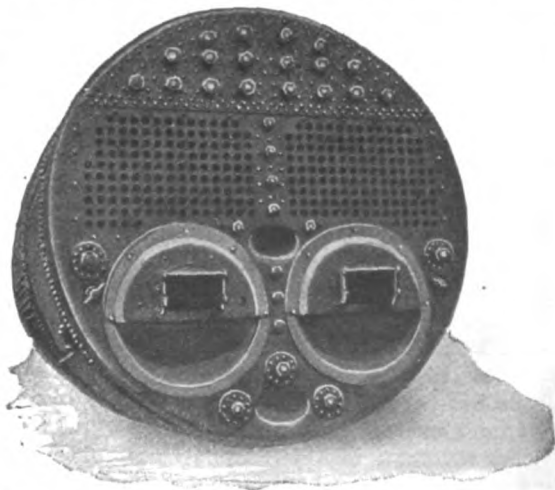
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turing buildings, warehouses and other facilities for shipping terminals on the site, consisting of eight six-story cement buildings, with necessary railroad connections, lighters and towboats for transshipment to various Sound ports and points. The terms require that the company is to be given a thirty-year lease of the entire property at a stipulated rental, providing for the payment of annual interest on the entire bond issue and a sinking fund to retire the bond issue at the expiration of the lease. It is to guarantee the sale of the bonds and put up a large bond running during the life of the lease to guarantee its fulfillment of all terms.

"The title of the property is to remain vested in the Port of Seattle, and at the expiration of the lease the property, with all improvements put in by the company, is to revert to the people."

E. F.

#### HARBOR IMPROVEMENTS AT SAN DIEGO, CALIF.

A subscriber in San Diego sends us the following information concerning the harbor improvements at that port:

"Extensive harbor improvements are well under way at San Diego, and more improvements are under consideration. The channel was recently dredged to a depth of 30 feet and a width on the bar of more than 600 feet, by a government appropriation of \$125,000. Enough of the appropriation was left to further deepen the channel to 33 feet, in which work they are now engaged.

"Meanwhile the city has two representatives in Washington who are seeking another appropriation for deepening the waterway to 40 feet. These representatives are meeting strong support and report that the chances are good for obtaining the appropriation.

"Limited dock accommodations made a municipal pier desirable, therefore, a bond issue of \$1,000,000 was voted for that purpose at a special election held here last November. The bids will be opened late in February. The plants

for the pier call for a 1,000 foot wharf at the foot of D, the principal street. Its berths will be dredged to a depth of 40 feet.

"Recent action taken by the Santa Fe railroad company and by the McCormick Lumber company has caused a large amount of lumber shipments for Arizona mines to be diverted from the port of Redondo. With the completion of the San Diego & Arizona railroad, it is estimated that 100,000,000 feet of lumber will pass through this port annually. The McCormick company has contracts to deliver 10,000,000 feet through here in the next three months. The Santa Fe has just re-established its storage yards at National City, on San Diego Bay. Vice-President Hodges, in charge of the purchasing department, announced for publication, recently, that the company would ship here 850,000 foreign ties, 600,000 domestic ties, and 15,000,000 feet of lumber this year, and as much or more in succeeding years.

"These shipments are handled by the McCormick Lumber company, whose wharf is already overtaxed. It is understood that the company will more than double its facilities in the immediate future."

#### INNOVATION AT PANAMA

An ingenious plan has been devised for lighting automatically the hundreds of beacons which will line the Panama Canal. The great canal will be the most brilliantly illuminated waterway in the world, and a considerable force would naturally be required in the operation of these lights. The acetylene burning lighthouses along the banks will be equipped with copper cylinders exposed to the sun. When the sun rises and the rays fall upon these cylinders, their expansion will serve to close valves that admit gas to the burners. At the close of the day, when the power of the sun's rays diminishes, the cylinders will contract and in turn, turn on the gas. The gas will be ignited by small pilot jets. It is expected that this plan will save both labor and gas. The estimated actual cost of operating the canal will be about \$4,000,000 a year.

## THE PANAMA CANAL AND ITS INFLUENCE

It has just been announced that the French government is about to send a commission to the West Indies to select a port in Guadeloupe or Martinique to be made a port of call for French ships that will pass through the Panama Canal, and that on the resumption of the British Parliament in February the First Lord of the Admiralty will present a scheme for a naval base in the Caribbean Sea, near Panama.

It has also been stated that British and German steamship companies have already made investigations with regard to coaling stations in the West Indies. These announcements serve to call attention anew to the probable effect of the Panama Canal on these islands, a subject which has been much discussed in Jamaican and other West Indian papers, as well as in British and other foreign journals of high standing.

While the commerce of North and South America, of Europe and the Far East will be profoundly affected by the opening of the new waterway, the West Indies, lying in the track of so great a part of the world's future ocean traffic, will in a peculiar manner feel the effect of the numerous changes in ocean shipping routes. It may be taken for granted that as a result of these changes an impetus will be given to the development of the resources of these fertile islands, which will bring immigration of labor where most needed; the competition of various lines for the import and export trade will bring lower freight rates; the question of direct and more frequent European mails will be settled, and increased passenger traffic will make the advantages of the equable climate of these islands better

known, especially in Europe, as a place of permanent residence or of resort to escape the severe winters of northern countries. That a new era of prosperity will thus come to the West Indies seems to be assured.

Owing to the larger population and greater amount of business in Europe and Asia, it is not to be expected that the opening of the Panama Canal will effect at once as great changes in the routes of ocean traffic as were brought about by the opening of the Suez Canal; but it should be borne in mind that the use of the new waterway is sure to result in the rapid development of the countries of Central and South America especially, as well as of the entire Pacific coast countries of North and South America. When the untold resources of the vast regions of South America are developed it will share with China the distinction of being the great commercial battle field of the nations.

There are other reasons for the belief that it will not be many years before the new canal will develop a business as large as that of the older one, the traffic through which has doubled in fifteen years. In 1909 there passed through the Suez Canal 4,239 vessels with a net tonnage of 15,407,527 tons, the transit receipts for that year amounting to \$23,484,351 and the dividends paid being 30 per cent. On its investment of \$19,352,037 for one-third of the stock of the canal, Great Britain received in interest and dividends \$5,150,577 in the same year. Many more ships would use the canal if it were not for the great expense of the tolls charged, the rate being \$1.45 per ton measurement for vessels with cargo, 95 cents per cubic ton measurement for vessels in ballast and \$1.92 for each passenger. It is not

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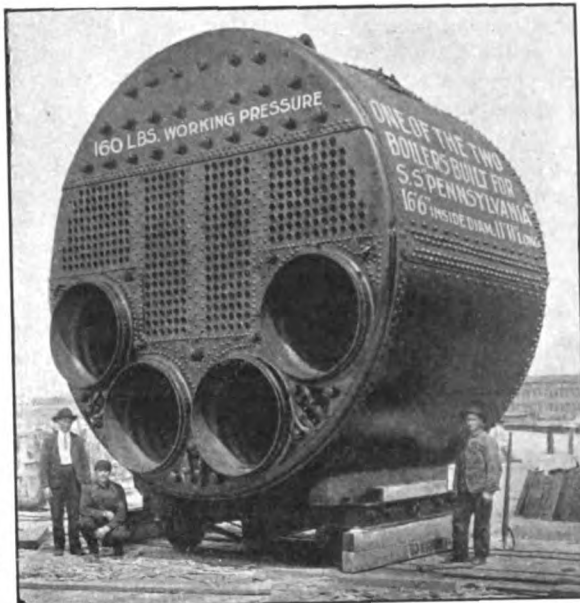
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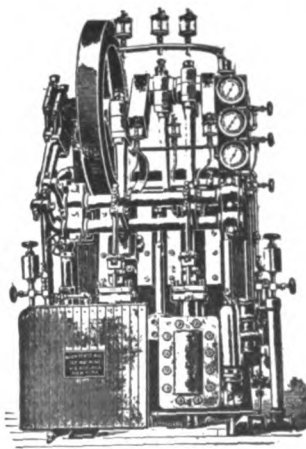
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expected that the tolls to be fixed for the use of the Panama Canal will be so high, and it is believed that the lower rates will largely increase the business of that waterway, which is sure to be immense at the start with the prospect of a considerable augmentation as the world's commerce increases and the countries repeatedly mentioned are developed.

That a large proportion of the world's ocean traffic will soon be carried in ships that will pass through the West Indies will readily be seen by a study of the reduction in sea distances to be brought about by the opening of the Panama Canal. There will then be from New York to all American Pacific ports north of Panama a uniform reduction of 8,415 miles and to such ports south of Panama a uniform reduction of about 5,000 miles. The corresponding reductions from Liverpool and Antwerp will be about 6,000 and 2,600, respectively. From Hamburg to San Francisco the reduction will be 6,200 miles.

Between New York and Yokohama the reduction will be 3,729 miles, and that Japanese city will be brought nearer to New York than Liverpool by 1,805 miles. Shanghai will be 1,629 miles nearer to New York. Sydney, Australia, will be 3,806 miles nearer to New York, and the distance between the two cities will be 2,382 miles less than the distance between Sydney and Liverpool. Wellington, New Zealand, will be 2,542 miles nearer New York, and the distance between them will be 2,759 miles less than between Wellington and Liverpool. Between New Zealand and Europe there will be an average saving of 1,600 miles. British ships which now pass through the Suez Canal on their way to China and Japan and thence to Vancouver, Seattle and San Francisco, will return to their home ports by way of the Panama Canal when return cargoes can be obtained in those cities. Ships from Japan, China, Australia, New Zealand and from Pacific ports of South America will sail to New York via the new waterway.

Shipping companies in all parts of the world are preparing to take advantage of the reductions in sea distances for their regular lines of ships. Shipbuilders and owners from Christiania to Odessa are fully aware of the fact that a large business will be done by tramp ships with the Pacific ports of the Americas which will carry on business with European ports by way of the Panama Canal.

That Great Britain will need a port of call, if not a naval base, in the West Indies for its mercantile and naval ships when the channels of ocean trade have been affected by the opening of the new canal, seems to admit of no question, and as the harbor of Port Royal at Kingston, Jamaica, is considered one of the best harbors in the world, it is almost certain to be selected for that purpose. A glance at a map will show that the eastern end of Jamaica is on a line drawn from the most eastern part of Cuba to Colon; and a further examination of the map will make it apparent that ships from the Atlantic ports of the United States and Canada, as well as the vessels from Europe, will choose the Windward Passage between Cuba and Haiti on their voyages to and from Panama and within a short distance of Port Royal at Kingston and Cuba. The position of Jamaica with Kingston assures it as a port of importance. Mr. Winston Spencer Churchill, now First Lord of the Admiralty, in 1904, when he was Under-Secretary of State, for the Colonies, used the following language:

"The opening of the Panama Canal will make Jamaica a far more splendid and far more wealthy state than anything that has ever been known in the West Indian Islands. Even if drydocks, repair shops, coaling depots and general supply of stores are maintained at Panama, it is to be expected that Great Britain would have a port of call and shipyard of its own for the accommodation of its extensive merchant marine and its warships in the Caribbean waters. As labor is cheap in Jamaica, it is quite probable that a

well-equipped shipyard with drydocks at Kingston would be used for repairs by vessels of other nations as well, and it is highly probable that ships could obtain coal and water and other supplies more cheaply at Kingston than at Panama, where it seems almost certain that much higher wages will have to be paid than in Jamaica. It is easy to think of circumstances arising which might make it an advantage to commerce in general to have these equipped shipyards, drydocks, warehouses and supply stores in Kingston as well as in Panama."

#### PANAMA TOLLS AND FREE SHIPS

##### Annual Report of the Commissioner of Navigation

THE report of Navigation Commissioner Chamberlain of Commerce and Labor states that on June 30, 1911, the total merchant shipping of the United States comprised 7,638,790 gross tons, of which 2,943,523 tons were on the Great Lakes, 966,898 tons were barges and canal boats, and only 872,671 tons were registered for foreign trade.

##### Panama Canal Tolls

The report maintains that the traffic of the Panama Canal should supply revenue for its maintenance and possibly in time for the partial liquidation of the debt incurred for construction. Toward this revenue we must ourselves contribute in some way, for it is not feasible, even if treaties permit to impose the entire burden of paying for the canal on foreign nations. Commissioner Chamberlain argues that the American contribution for the maintenance of the Panama Canal, like American contributions for the Army and Navy and every other form of national defense and for every other form of improved waterways, in fairness to all concerned, ought to be paid not by a direct levy on American shipping, but by appropriations from the treasury of the United States, equivalent to a general contribution by the whole people, as proposed by the late Senator Frye.

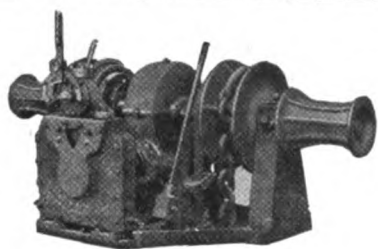
Our general policy toward improved waterways was established by the act of 1884, which provided:

"No tolls or operating charges shall be levied upon or collected from any vessel, dredge or other watercraft for passing through any lock, canal, canalized river or other work for the use and benefit of navigation, now belonging to the United States or that may be hereafter acquired or constructed."

Under this general policy since July 1, 1884, Congress has appropriated for river and harbor improvements up to June 30, 1912, a total of \$527,065,707.94, compared with a total estimated cost of the Panama Canal to the date of opening of \$375,000,000. These improvements have been made and maintained at the expense of the entire people.

Congress, of course, could have imposed tolls on all vessels using any of the improved waterways on which so much has since been expended, just as Germany imposes tolls for the navigation of the Kaiser Wilhelm Canal, but if it chose to impose such tolls Congress must impose them upon American vessels as well as on foreign vessels, for the United States and all other maritime nations make no discrimination on account of the flag. This policy of equality of treatment is as old as the republic and has been embodied in treaties, approved by practically every President from the time of Washington to Taft, and ratified without dissent by United States Senate, regardless of parties. The Hay-Pouncefote canal treaty reaffirmed a traditional American policy in article 111, providing:

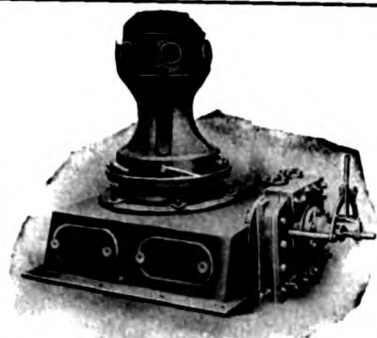
"1. The canal shall be free and open to the vessels of commerce and war of all nations observing these rules, on terms of entire equality, so that there shall be no discrimination against any such nation, or its citizens or subjects in respect of the conditions or charges of traffic, or other-



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wise. Such conditions and charges of traffic shall be just and equitable."

Whether other nations shall see fit to appropriate money from their treasuries to pay the Panama tolls on merchant vessels under their respective flags is a matter for them to determine. If they do so, they will be well within their treaty rights, as it is well within ours to provide a permanent annual appropriation from the treasury to pay the tolls on all American ships. To hold otherwise is to assert that we have bound ourselves to do nothing to promote our shipping, in the full knowledge that foreign nations will pay directly or indirectly Panama tolls as they already pay Suez tolls on their respective mercantile fleets. Of \$24,550,235 Suez ship tolls collected in 1910 about 25 per cent were paid in one form or another from the treasuries of the nations whose flags those foreign vessels fly, respectively.

All other river, harbor and canal improvements, paid for and maintained by the whole people of the United States, are predicated on some benefit to some American interest on every voyage of every vessel navigating the improved waterway. Fully one-third of the ships and of the cargoes which will pass through the Panama Canal probably will never touch the United States, and will contribute little or nothing to our industrial growth. It well may happen that in some instances the canal may deprive us of trade which otherwise would have been ours. We cannot and will not be expected to maintain an untaxed waterway for the foreign navies of the world and the commerce of foreign countries with one another.

The Frye bill is based on the belief that in accord with our treaties every nation, including the United States, will contribute to the support of the canal in proportion to the use it makes of it. Each nation is free to choose the manner in which it will make its contribution. The bill proposes that the American people shall pay and American merchant ships and their cargoes shall not pay tolls, but shall enjoy the navigation of the canal precisely as they now enjoy untaxed the navigation of a thousand improved American harbors, rivers, lakes and canals.

The money to maintain navigation improvements at home has not been voted in the form of government payment of tolls for the use of rivers and harbors. The money is voted directly in river and harbor appropriations. It is a tax on the people of the United States, no more and no less under one form than it would be under the other. If the Frye bill be a disguised subsidy, then practically every steamboat in the United States since 1884 has been subsidized.

The registry law, taken alone, under the conditions of modern commercial life, can do nothing to help American navigation in foreign trade and can do nothing to help domestic shipbuilding. That law simply provides that American marine documents and the American flag cannot be used by the American owner of a merchant steamship built abroad. It does not undertake to prevent an American citizen from buying a ship abroad and under a foreign flag securing the best return he can upon his investment. The registry law has not compelled American capital to stay at home and directed its investment in the products of American yards. Yet, unless the law can accomplish such an economic miracle, it can be of no benefit to shipbuilders. The passage of a bill admitting new foreign-built ocean steamships to American registry to engage solely in the foreign trade is in itself desirable. It is also desirable as an approach to the legislation which time must eventually bring about for the organization of an American ocean mail service, adequate to our needs and justified by our rank as a naval power, by our remote territories and possessions, and by our ownership of one of the two great interoceanic canals. The registry law has stood in the way of the at-

tainment of that end, as has desultory advocacy of the futile policy of discrimination and retaliation. Every other maritime nation, including Norway, which this year subsidized a trans-Atlantic Norwegian passenger line, has adopted both the policy of free ships and the policy of subsidies, the one to promote its national navigation, the other to promote domestic shipbuilding, giving gainful employment to its people and contributing to national defence, as Jefferson suggested. The United States has pursued neither. Free registry and subsidies are not alternative or conflicting propositions, but independent methods of dealing with two different subjects.

The reports presents the latest financial statement of the Suez Canal, and discusses methods of measuring ships' tonnage for toll purposes, free materials for shipbuilding, the motor boat law, anchorage regulations, and includes the usual statistics of the merchant shipping of the United States and other countries.

#### NEW CONSTRUCTION AT CRAIG SHIPBUILDING CO.

The Craig Shipbuilding Co., at Long Beach, Calif., send us the following report: "We are now building a steamer for the Western Steam Navigation Co., which is 308 feet over all, 44 feet beam, 22 feet moulded depth, built with well forward and with shelter deck from midship house aft. This steamer will be fitted with triple expansion engine to indicate about 2,000 h. p., three water tube boilers will supply steam at 200 pounds pressure. We expect to deliver this steamer about July 1st; cost, \$300,000.

"We also have under construction a lumber and general freight steamer, with limited passenger accommodations, for the Long Beach Navigation Co., of Long Beach. This vessel will be 200 feet long, 40 feet beam, 16 feet moulded depth, to carry approximately 1,000,000 feet of lumber. She will be fitted with triple expansion engine, indicating about 900 h. p., two water tube boilers to supply steam at 200 pounds pressure, and is expected to be delivered about the first of September. Cost, \$175,000.

"We are further building for the L. A. Submarine Boat Co. an experimental submarine boat, 75 feet long, and 8 feet beam, to be operated by oil engines. This boat we expect to launch about April 1st.

#### SALE OF U. S. S. "LOCUST"

Sealed proposals will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, March 11, 1912, when they will be publicly opened, for the purchase of the "Locust," appraised value \$2,000. This vessel will be sold for cash to the bidder offering the highest price therefor above the appraised value. Forms of proposal and bond, and information concerning the vessel and the terms and conditions of sale, may be obtained upon application to the Bureau of Supplies and Accounts. The vessel may be examined at the Naval Coal Depot, Tiburon, Cal. BEEKMAN WINTHROP, Acting Secretary of the Navy.

1-24-12.

#### SHIPBUILDING RECORDS BROKEN

Last year witnessed the most remarkable activity in shipbuilding in all marine history. There has been a set demand for new ships in all parts of the world, in one year 2,199 vessels having been built. These vessels aggregate 3,568,076 tons, while the total power of the engines required to drive them has been 4,113,469 H. P. The new ships include not only all classes of cargo steamers, but the finest and largest types of ocean liners, which set a new standard for size and luxury of equipment at sea. One company alone, the Hamburg-American, is building twenty-one steamers, aggregating 236,000 tons, which will give the line a total of 1,256,150 tons, the largest in the world under one house flag.

## SHIPPING IN SIXTY-SECOND CONGRESS

A LARGE number of bills, with reference to shipping, have been introduced in the House, but very few of these bills are at this time seriously considered. There are none of any importance with the probability of passage, with the exception of the one in relation to "Wireless Telegraphy," the "Alexander Free Ship Bill," and what is known as the "Seamen's Bill," introduced by Mr. Wilson of Pennsylvania.

We are indebted to Congressman W. E. Humphrey of Washington for copies of these bills, of which we are reproducing herewith the first two mentioned, on account of their value to shipping interests. The Seamen's Bill, which is of no less value, will be published in the March number on account of lack of space in this issue.—Ed. Note.

H. R. 15357—In the House of Representatives—December 11, 1911.

Mr. Alexander introduced the following bill, which was referred to the Committee on the Merchant Marine and Fisheries and ordered to be printed:

A bill to regulate radio communication.—Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled: That a person, company or corporation within the jurisdiction of the United States shall not use or operate any apparatus for radio communication as a means of commercial intercourse among the several States, or with foreign nations, or upon any vessel of the United States engaged in interstate or foreign commerce, or for the receipt or transmission of radio messages or signals the effect of which extends beyond the exclusive jurisdiction of the State or Territory in which the same are made, or where interference would be caused thereby with the receipt of messages or signals from beyond the jurisdiction of the said State or Territory, except under and in accordance with a license in that behalf granted by the Secretary of Commerce and Labor upon application therefor; but nothing in this act shall be construed to apply to the transmission and exchange of radio messages or signals between points situated in the same State, provided the effect thereof shall not extend beyond the jurisdiction of the said State or interfere with the reception of messages or signals from beyond said jurisdiction; and a license shall not be required for the transmission or exchange of messages or signals by or on behalf of the government of the United States. Any person, company or corporation that shall use or operate any apparatus for radio communication in violation of this section, or knowingly aid or abet another person, company or corporation in so doing, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding five hundred dollars, and the apparatus or device so unlawfully used and operated may be adjudged forfeited to the United States.

Sec. 2. That every such license shall be in such form as the Secretary of Commerce and Labor shall determine and shall contain the restrictions pursuant to this act on and subject to which the license is granted; shall specify the ownership and location of the station in which said apparatus shall be used and other particulars for its identification; and shall not be construed to authorize the use of any apparatus for radio communication in any other station than the one specified. Every such license shall be subject to such regulations as may be established from time to time by authority of this act or subsequent acts and treaties of the United States. Every such license shall provide that the President of the United States, in time of war or public peril, may cause the closing of any station for radio communication and the removal therefrom of all radio apparatus, or may authorize the use and con-

trol of any such station or apparatus by any department of the government upon just compensation to the owner.

Sec. 3. That every such apparatus shall at all times, while in use and operation as aforesaid, be in charge or under the supervision of a person or persons licensed for that purpose by the Secretary of Commerce and Labor. Every person so licensed who, in the operation of any such wireless apparatus, shall fail to observe and obey regulations made pursuant to this act or subsequent acts or treaties of the United States, or any one of them, shall, in addition to the punishments and penalties herein prescribed, suffer the suspension of his said license, and the same shall not be renewed for a period of one year from and after the date of his conviction of any such failure. It shall be unlawful to employ any unlicensed person or for any unlicensed person to serve in charge of the use and operation of such apparatus, and any person violating this provision shall be guilty of a misdemeanor and on conviction thereof shall be punished by a fine of not more than one hundred dollars or imprisonment for not more than two months, or both, in the discretion of the court, for each and every such offense.

Sec. 4. That for the purpose of preventing or minimizing interference with messages or signals relating to vessels in distress or of naval and military stations by private or commercial stations, the President of the United States shall establish from time to time regulations, by designation of wave lengths or otherwise, to govern said private or commercial stations, which may be granted licenses by the Secretary of Commerce and Labor in accordance therewith, and such regulations shall have the force and effect of law and be enforced by the Secretary of Commerce and Labor through collectors of customs and other officers of the government as other regulations herein provided for.

Sec. 5. That every license granted under the provisions of this act for the operation or use of apparatus for radio communication shall prescribe that the operator thereof shall not knowingly interfere, as in this act provided, with messages relating to vessels in distress or with any naval or military station. Such interference shall be deemed a misdemeanor, and upon conviction thereof the owner or operator, or both, shall be punishable by a fine of not to exceed five hundred dollars or imprisonment for not to exceed one year, or both.

Sec. 6. That the Secretary of Commerce and Labor shall have power to make regulations prescribing the form and manner in which applications for licenses under this act shall be made and respecting the granting of such licenses; and regulations, by wave lengths or otherwise, suitable to secure the due execution of the provisions of this act, and from time to time to add to, modify, amend or revoke such regulations, as in his judgment may seem expedient; and such regulations, when so adopted, shall have the force and effect of law.

Sec. 7. That licenses may be granted under this act for the use and operation of apparatus for radio communication at fixed stations upon the mainland, islands or the navigable waters of the United States, to be known as licenses of the first class, and upon vessels of the United States engaged in interstate or foreign commerce, to be known as licenses of the second class.

Sec. 8. That the expression "radio communication" as used in this act means any system of electrical communication by telegraphy or telephony without the aid of any wire connecting the points from and at which the messages, signals or other communications are sent or received.

Sec. 9. That messages and signals relating to ships in distress shall have priority over all other messages and

must be answered with similar priority, and, subject to such priority, messages by, to or on behalf of the Army or Navy of the United States shall have priority over other messages. Any person failing to comply with the requirements of this section shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable by a fine of not more than five hundred dollars and by the revocation of his license.

Sec. 10. That a person, company or corporation within the jurisdiction of the United States shall not knowingly utter or transmit, or cause to be uttered or transmitted, any false or fraudulent distress signal or call, or false or fraudulent signal, call or message of any kind. The penalty for so uttering or transmitting a false or fraudulent distress signal or call shall be a fine of not more than two thousand five hundred dollars, or imprisonment for not more than five years, or both, in the discretion of the court, for each and every such offense, and the penalty for so uttering or transmitting, or causing to be uttered or transmitted, any other false or fraudulent signal, call or message shall be a fine of not more than one thousand dollars, or imprisonment for not more than two years, or both, in the discretion of the court, for each and every such offense.

Sec. 11. That a person, company or corporation shall not use or operate any apparatus for radio communication on a foreign ship in territorial waters of the United States otherwise than in accordance with the regulations made for that purpose by the Secretary of Commerce and Labor, and for any breach of any such regulations the offender shall be liable to a penalty of not to exceed fifty dollars for each offense and to the forfeiture of any apparatus for radio communication used or operated on such ship. Save as aforesaid, nothing in this act shall apply to apparatus for radio communication on any foreign ship.

Sec. 12. That the trial of any offense under this act shall be in the district in which it was committed, or if the offense was committed upon the high seas or elsewhere out of the jurisdiction of any particular state or district, shall be in the district where the offender is found or into which he is first brought.

Sec. 13. That this act shall take effect and be in force on and after the first day of January, 1913; Provided, however, That the fourth, fifth, ninth, tenth and twelfth sections of this act shall take effect and be in force on and after four months after its passage.

H. R. 16692—In the House of Representatives, January 3, 1912.

Mr. Alexander introduced the following bill, which was referred to the Committee on the Merchant Marine and Fisheries and ordered to be printed:

A bill to provide American registers for seagoing vessels wherever built and to be engaged only in trade with foreign countries and with the Philippine Islands and the Islands of Guam and Tutuila, and for the importation into the United States free of duty of all materials for the construction and repair of vessels built in the United States, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section forty-one hundred and thirty-two of the Revised Statutes is hereby amended so as to read as follows:

"Sec. 4132. Vessels built within the United States and belonging wholly to citizens thereof, and vessels which may be captured in war by citizens of the United States and lawfully condemned as prize, or which may be adjudged to be forfeited for a breach of the laws of the United States, and seagoing vessels, whether steam or sail, not more than five years old at the time they apply for

registry, wherever built, being wholly owned by citizens of the United States or corporations organized and chartered under the laws of the United States or any State thereof, and no others, may be registered as directed in this title. Foreign-built vessels registered pursuant to this act shall not receive any privilege, advantage or favor in the use of the Panama Canal granted to United States vessels engaged in the coastwise trade; but such vessels shall be entitled to all other benefits and privileges given to the vessels of the United States: Provided, That a foreign-built yacht, pleasure boat or vessel, not used or intended to be used for trade, admitted to American registry pursuant to this section, shall not be exempt from the collection of ad valorem duty provided in section thirty-seven of the act approved August 5th, 1909, entitled 'An act to provide revenue, equalize duties and encourage the industries of the United States, and for other purposes.'"

Sec. 2. That all materials of foreign production which may be necessary for the construction or repair of vessels built in the United States for foreign account or ownership or for the purpose of being employed in the foreign or domestic trade of the United States, and all such materials necessary for the building or repair of their machinery and all articles necessary for their outfit and equipment may be imported into the United States free of duty under such regulations as the Secretary of the Treasury may prescribe.

Sec. 3. That any vessel registered under the provisions of this act may be taken and used by the United States as cruisers or transports or colliers upon payment to the owners of the fair and actual value of the same at the time of the taking, and if there shall be a disagreement as to the fair actual value at the time of taking between the United States and the owners, then the same shall be determined by two impartial appraisers, one to be appointed by each of the said parties, who, in case of disagreement, shall select a third, the award of any two of the three so chosen to be final and conclusive.

Sec. 4. That all acts or parts of acts in conflict with the provisions of this act are hereby repealed.

#### SAN FRANCISCO-AUSTRALIA MAIL SERVICE

The Oceanic Steamship Company of San Francisco will tender a bid for the mail contract service between San Francisco and Australia as soon as bids are advertised for by the Postoffice Department. In the meantime no public statement will be made regarding the future plans of this company, for, as Mr. F. S. Samuels, assistant to the president, writes *Pacific Marine Review*:

"While we expect to be the successful bidders, you will understand that any steamship owner can put in a bid for the service, and it might be premature for him to state definitely that he is going to be awarded the contract until after the bids are opened. For this reason I do not wish to say much at present."

#### TWICE AROUND THE EARTH

All records for pleasure cruising were broken recently when the steamship "Cleveland," of the Hamburg-American Line, with 500 tourists aboard, completed her tour of the world at San Francisco. At the end of her long cruise the steamer arrived promptly on scheduled time on February 1st. She remained only six days in port, when a large force prepared the return trip around the world, enabling her to sail on February 6th with 500 tourists. The demand for this greatest of all pleasure cruises has been so great that the Hamburg-American Line will send its model cruising steamer, the "Victoria Louise," on two trips around the world this coming season, sailing from New York on November 12th, and from San Francisco on February 27th.

## WORLD'S MOST IMPORTANT ADMIRALTY COURT DECISION

**N**EVER before in recent times has any Admiralty action attracted more world-wide attention than that in which the White Star Line, owners of the magnificent steamer *Olympic*, sued the British Government, as well as the commander of the warship *Hawke*, for damages for collision between these vessels off the Isle of Wight in September, 1911.

A small sketch of the waters in which the accident occurred accompanies this article.

The collision took place on a fine day, not long after midday, in an open channel. The situation was free, and was not complicated by the presence of navigation of any other vessel. One of the colliding vessels was the largest and finest product of the shipbuilding enterprise and the skill of the first maritime nation of the world, the other was one of the protected cruisers of her Navy. The contemplation of the calamity and of the damage which resulted from it cannot but produce a feeling of deep regret and even a sense of pain. It ought not to have happened, but it did happen, and to decide upon the evidence how and why it happened and who are, or is, to be blamed for it, according to the law of the Admiralty, was an enormous task and most nobly and judiciously performed by Sir Samuel Evans.

The *Olympic* is a triple screw steamship of 45,000 tons gross, and 24,000 tons net register, of 882½ feet in length, of 92½ feet beam, fitted with turbine and reciprocating engines, with a combined power equal to 59,000 indicated horsepower, and manned by a crew of 885 hands all told. Her draft at the material time was 33 feet 6 inches forward and 34 feet aft. Her displacement at a mean draft of 36 feet 6 inches in sea water is 50,500 tons, and at 34 feet is 51,340 tons. "She is a veritable Levathan that makes the deep boil like a pot." *H. M. S. Hawke* is a twin screw first-class protected cruiser of 360 feet in length, of 60 feet beam, with an indicated horsepower of 10,000 with natural, and 12,000 with forced draught. At the time of the accident she drew 22 feet 4 inches of water forward and 24 feet 6 inches aft.

The circumstance that the vessels were respectively the property of one of the greatest shipping companies in the world and the Government of the United Kingdom, that the *Olympic* had on board at the time a full complement (one of the largest ever carried) of distinguished passengers, and that the liner, the newest and roomiest of her class afloat, had only a few months before been put in service, tended to arouse enormous interest in the trial of the action, while the nature of the evidence is such that the proceedings from day to day evoked the liveliest concern in nautical circles all over the world.

There have been few reports of shipping cases so voluminous as those appearing in this instance in the "Journal of Commerce of Liverpool and London." Nautical readers unquestionably have found much to interest and instruct them in reading and rereading the evidence, for in many respects the case forms a model collision action, giving a very fair idea of the procedure in most disputes of this kind tried in Admiralty Courts.

There is always the varying story of the two sides, supported by an abundance of evidences, mutually contradictory as to facts, the important elements of time and speed, as well as the relative position of the two vessels invariably being looked at and explained from altogether different points of view.

In this instance, the problem for the judge and his assessors was further complicated by the defense raised by the "*Hawke*" with reference to what has been called the "suction" theory, in which respect alone it is an invaluable

record of evidence and opinion from some of the most eminent naval architects and nautical experts of the day.

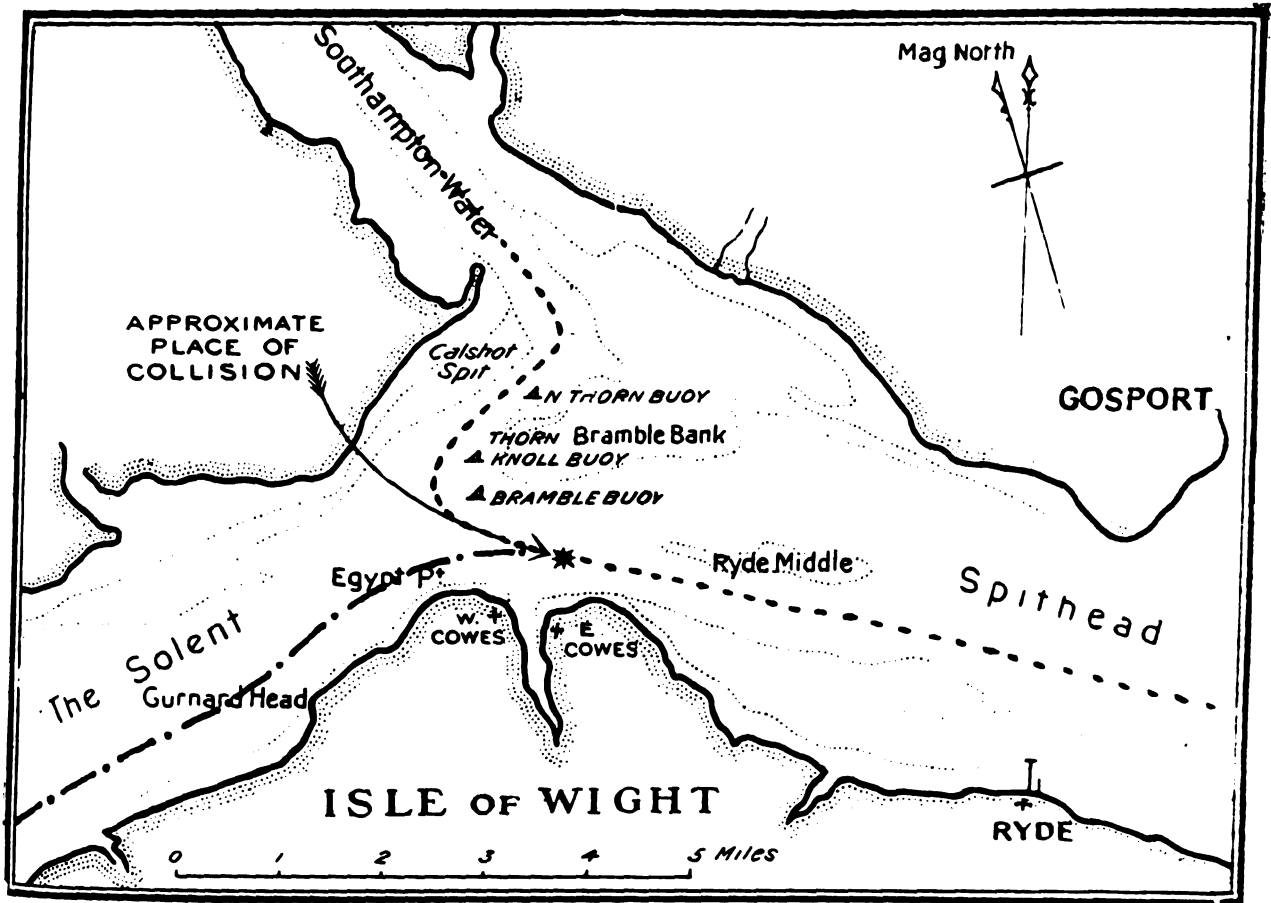
The navies and mercantile marines of the world have taken the keenest interest in the proceedings, and it is therefore well worth to dwell again theoretically from the suction point of view and practically in regards to compulsory pilotage on this important case which is destined to go down to history as one of the most vital on record, and which now has been appealed.

Our London correspondent informs us that up to the time of the first day of the trial, the Admiralty had expended £10,000 as witness fees, experiments, charts, correspondence, etc. This included the expenses of the American expert, Mr. Taylor. The fees of the counsel have not up to the present been ascertained, but with the cost of printing, the shorthand notes and the expenses of the ten days' trial, it must be a low estimate when the expense of the whole case cannot be less than £20,000.

Space does not permit the deserved reproduction of the President's extremely full and able criticism of the evidence, of which a summary appeared in *Pacific Marine Review's* January issue. In the study of this important judgment, delivered on Tuesday, December 19th, 1911, in which the "*Olympic's*" pilot was solely blamed, I find a clear, precise and highly interesting decision under the following headings, published in booklet form, reprinted from the *Journal of Commerce of Liverpool and London*: "Position Before the Collision," "Overtaking on Crossing Vessels?" "Where the Collision Took Place," "Question of Speed," "Colliding Ship's Course," "Was the '*Hawke*' the Overtaking Vessel?" "Another Test," "The Suction Theory," and "Compulsory Pilotage Protection," of which I only choose to reproduce the two latter. Concerning the "Suction Theory," the President said:

"I now come to the circumstances which occurred immediately before the vessels came into collision. When the '*Hawke*' was in a position to clear the East Conical buoy an order was given to port her helm five degrees. This was done in order to give as much room as possible to the '*Olympic*.' The '*Hawke*' changed her heading to the south under this helm to the extent of less than a point. Suddenly, however, she swerved in towards the large vessel. Evidence was given by Mr. Taylor, a naval constructor in the U. S. Navy Department, on the theory of suction or interaction between vessels, especially in shallow water—a subject to which he had given much study. Interesting experiments were also made in the presence of the Elder Brethren and of myself. They were not very conclusive, especially as to the direction and extent of the forces, but they showed that disturbing forces were set up. In this case the speeds of the two vessels were high, and the disparity between the displacements of the two vessels was enormous: they were roughly as 7 to 1; and they were in close proximity. Moreover, if the place of collision which I have accepted is substantially the correct one, it happened that just before the swerve the '*Hawke*' was passing over the shallowest part of a shoal, which would tend to give her a sheer towards deeper water. The '*Olympic*' was at about the same time passing over a bottom which was irregular, and of a comparatively small depth. I have decided that there was no starboarding by the '*Hawke*' as contended by the '*Olympic*'—and I am of opinion that in the exceptional conditions which prevailed, the forces set up in the water are sufficient to account for the '*Hawke*' being carried towards the '*Olympic*' in a swerve which was beyond her control. The '*Olympic*' had ample room and water in the channel to the northward. She came much too close to the cruiser on the south side of the channel. She





### THE SCENE OF THE COLLISION

Heavy dotted line from Southampton Waters indicates approximate course of *Olympic* to sea.  
Heavy dotted line from The Solent indicates approximate course of *Hawke*.

did not take proper steps to keep out of the way. She might have averted the collision right up to the last if she had put her helm hard astarboard. Even when the pilot saw the 'Hawke' come towards his vessel, he delayed action; and, even when he took it, he ordered the helm hard aport, which was a very doubtful maneuver. In the agony of the situation certain orders were given on the 'Hawke.' They did not avail; but they were not wrong. In carrying them out the helm was jammed, but this was an accident for which no one is responsible, and which did not affect the collision. I cannot find that the 'Hawke' is to blame for not acting otherwise or earlier, because she had to keep her course and speed until it was clear that the collision could not be averted by the action of the 'Olympic' alone; and, as I have said, action on the part of the *Olympic* at almost the last moment might have prevented the accident.

"Complaints were made that the 'Hawke' failed to give sound signals when rounding Egypt Point on a port helm, and at the last, when the commander ordered 'Port 5 deg.' in an attempt to get as far away from the 'Olympic' as possible. These signals ought to have been given; but the omission to give them had nothing to do with the collision, and there is no presumption of fault in the case of the King's ship.

"On the main issues raised I therefore find upon the evidence: (1) That the 'Olympic' has failed to establish her contention that the 'Hawke' was an overtaking vessel bound to keep out of the way; (2) that the vessels were crossing vessels, and that the 'Olympic,' having the 'Hawke' on her starboard side, should have kept out of the

way of the 'Hawke'; (3) that the 'Hawke' was not to blame for what she did or omitted to do; and (4) that the cause of the collision was the faulty navigation of the 'Olympic' by her pilot in going dangerously near the 'Hawke,' and the non-observance of the rule which required her to keep out of the way. I am not troubled in this case with the question of whether a breach by the 'Olympic' of article 19 of the sea regulations involves a statutory presumption of fault under section 419 (4) of the Merchant Shipping Act, 1894, because I am of opinion that the breach contributed to the accident. This question may have been decided inferentially in the *Sanspareil* (1900 p. 267), but upon that, having regard to the decision in the *Hero* (1911), under another rule, I do not express any view."

Very little information has yet been published concerning the question commonly known as suction, practically the only reference which has been made to the subject being in a paper read by Mr. D. W. Taylor before the Society of Naval Architects in the United States in 1909, and which paper was referred to at considerable length. An abstract of the principal points arising from this paper and from the subsequent discussion which took place will probably be of interest on the present occasion.

A brief consideration of the manner in which water is disturbed by a ship in motion roughly indicates that abreast the bow of the ship there is a region where the pressure of the water is greater than it would be if the ship was not present, and that the water itself is moving upwards and forwards. Towards the middle of the ship a region is reached where the water, while continuing to move outwards, begins also to flow sternwards, and abreast

the middle of the ship the speed of the water sternwards is a maximum and the pressure is the least. Excess of pressure in the water is shown by elevation of the surface forming waves, and consequently when the pressure is less than in still water there will be a hollow in the surface. The exact amount of depression can be ascertained by experiments, and Mr. Taylor quotes a case investigated by Mr. Babcock in connection with ships using the channel from New York, where it was found that in quite shallow water a large ship going at 13 knots settled as much as three feet. The existence of such a depression somewhere towards the middle of the ship being admitted, it follows that when an overtaking vessel gets somewhere near the stern of the leading ship, it will naturally run down hill into the depression, although as it gets further into the hollow it meets a current of water which somewhat retards its progress. The overtaking vessel, after coming to the bottom of the depression, has not only to overcome the adverse current, but has to climb out of the hollow. If, however, it does pass this position, the overtaken vessel then finds itself in the favorable position of running down hill into the hollow caused by the overtaking vessel; hence with vessels going about the same speed, a kind of sea-saw action is set up, to which further reference will be made later, and it may happen that it is very hard for the two vessels to part company.

#### What the Experiments Show

Mr. Taylor investigated the subject by towing two models on parallel courses in different relative position; the models were only allowed very slight movement from the direction of travel, but the movement was sufficient to indicate the nature of the forces acting at the bow and stern of the vessel, and a brief description of these tendencies will probably suffice to indicate the phenomena of passing vessels without going into any numerical results. It will be preferable for the sake of clearness to discuss the forces acting on the overtaking vessel. As the bow of the latter vessel begins to overlap the leading ship there is little action between the two. The forces both at the bow and the stern are tending to keep the vessels apart, but, quite contrary to what would be expected, the repulsion at the stern is much greater than at the bow, and consequently there is a tendency for the bow of the following ship to turn inwards. As the vessels continue to draw abreast the bodily attraction becomes larger, but the turning in tendency is reduced, although still comparatively large. When the bows of the two vessels are in line the forces of attraction tending to bring the vessels together reach their maximum value, but the swinging is practically nil. As the overtaking vessel draws further ahead the conditions are, generally speaking, reversed, and when the distance between the bows is somewhat greater than half the length the two ships are repelled, but there is now a tendency for the stern to swing inwards towards the other ship. When the leading vessel is slightly more than half a length ahead she is practically out of any danger from collision.

Experimental results thus briefly described illustrate a difficulty which may occur with the rudder when the two vessels are in certain relative positions. For example, when the bow of the overtaking vessel is abreast the middle of the other ship the forces acting are such as to attract the bow of the former, and to repel its stern, causing the overtaking vessel to swing inwards. In such a case the navigator would naturally put the helm over to throw the bow outwards. The rudder pressure in such a position is opposite in direction to the repelling forces acting at the stern, being either lesser or greater; if lesser, there is still a tendency to swing the ship inwards, and if greater the excess of rudder pressure pushes the stern inwards, consequently the net force both at the bow and stern acts to-

wards the overtaken ship, pushing the two vessels together, although the swinging is reduced. If, therefore, such a relative position is reached, a collision is apparently unavoidable.

The point of fact that is to be determined is whether the ships were sufficiently near together that the following ship came within the region of water disturbed by the other vessel. What is a minimum safe distance can only be determined by experiments guided by the conditions existing at the time of the collision.

#### Some Independent Evidence

Independent evidence of the existence of some such phenomena as Mr. Taylor found existed in the experiments that he made, was furnished by two particular speakers in the discussion on Mr. Taylor's paper. The first, Mr. Harvey D. Goulder, an eminent Admiralty lawyer of Cleveland, Ohio, who, it was stated, had probably had as much experience as any other man in collision cases upon the great lakes, made some remarks of which the following is an abstract. As regards ships passing in opposite direction, navigators generally say that as the ships meet the bows tend to drop apart, but as they come abreast the vessels straighten out, and at the sterns there is an inclination to draw together. As the vessels are, however, moving in opposite directions, the time for the operation of any force is so short that the ships are not appreciably affected. The greatest danger occurs when one ship is endeavoring to pass another in the same direction, when the influence of water pressure would have considerable time in which to act if the speeds were not widely different. According to the testimony in some cases, the first effect is to push away the stern of the overtaking ship. When the two vessels are about abreast the slower one appears to be drawn along at a faster rate than her normal speed, so that she may gain upon the other vessel only to drop back again later.

There also appears to be a somewhat general agreement that when the stern of the overtaking vessel is approximately one-quarter of the length forward of the stern of the overtaken ship the latter sheers off, and the two sterns are drawn together. It should be recognized that these phenomena, as reported by Mr. Goulder, practically agree with the experiments made by Mr. Taylor. Mr. Hermon A. Kelley, of Cleveland, a lawyer of large experience in collision cases in the Great Lakes region, quotes what he describes as examples of the best known manifestations of the ordinary effects of suction which are familiar to navigators. The first case is that of one vessel overtaking and passing another where there is a well-known tendency described as "see-sawing," which occurs when the two vessels are nearly abreast. The overtaking steamer appears to gain until the two vessels are about abreast, when the overtaken ship will shoot ahead; the first vessel then gains and the process repeats itself. Mr. Kelley says that this effect of suction is so well known that slow craft have been reported to hang on to steamers for long distances, thus practically receiving free towage; this practice may often result in keeping vessels abreast of each other until some critical position may be reached with disastrous results.

In the second case, where the overtaking vessel has drawn slightly ahead, there is usually a tendency for the sterns of the two vessels to draw together, which is sometimes so strong that the stern of the slower vessel is pulled in and her bow shot off, causing a violent sheer, even in cases where the helm was hard over, and this action has often resulted in sending an overtaken vessel off her course and brought about a collision with a third ship. The third case mentioned by Mr. Kelley is where the overtaking vessel is about three-quarters of a length ahead when the

stern tends to approach the bow of the following ship. Collisions have sometimes occurred in this position, but it certainly appears that the proper use of the helm would prevent any dangerous movement in this particular direction. It therefore appears that the result of experiments made by Mr. Taylor are to a great extent confirmed by independent witnesses, and the testimony adduced is certainly corroborative of what may be expected to happen when two vessels in close proximity and going about the same speed attempt to pass one another. The reason why so much attention has been drawn to this subject in the United States is the existence of a large number of inland waterways of considerable size which are comparatively narrow, and where consequently the navigation, especially in such cases as these, becomes difficult and dangerous.

In relation to compulsory pilotage protection, his lordship's decision is of intrinsic value and doubtly interesting:

"One other matter still remains for decision, viz., whether the owners of the 'Olympic' are protected from the results of her faulty navigation by the Defense of Compulsory Pilotage.

"It was formally proved by the first witness at the trial that the 'Olympic' was in charge of a duly licensed pilot in a Compulsory Pilotage district; that all the orders preceding the collision were given by the pilot; and that all his orders were properly and promptly obeyed. During the rest of the trial this matter was left untouched. It receded into the background, and seemed to have faded out of memory, until Mr. Aspinall in his address in answer to Mr. Laing dealt with it. The Elder Brethren and I were carefully watching to see whether it would be suggested to the witnesses for the 'Olympic' that anyone other than the pilot was to blame. It was put forward in a vague sort of way by Mr. Aspinall at the end of the case that the pilot was not solely responsible for the accident, 'Because he was navigating his ship upon an assumption of facts which did not exist, and he was not kept informed of the real facts.' When asked who the persons were other than the pilot whose negligence partly caused the accident, he said, 'The people, I should say, who were on the bridge, or the look-out man.' He referred to an answer of the pilot in which he said, 'Of course, while I was taking the turn, I was certain that I should get round far ahead of her, so while I was making the maneuvers round the West Bramble buoy, I was not paying much attention to her.' Then Mr. Aspinall added 'That was all the pilot knew and no more, and if his view as to the place was entirely wrong, then he was not properly informed by the owners' servants as to what the real state of affairs was.' Mr. Aspinall did not explain how the owner's servants, and which of them, could know that the pilot was not paying much attention to the cruiser, which was within his sight, and to which he had signalled; or how they, and which of them, could know that the view of the pilot as to the place of the 'Hawke' was wrong. Similarly, Mr. Bateson, to whom I allowed a final reply, said that his case was that neither the man looking out forward or the man looking out aft gave any information to the pilot, 'and the pilot never knew, nobody on the bridge knew that we were meeting on converging courses.' I asked him if he alleged any fault on the part of Capt. Smith? At first he answered, 'It may be that Capt. Smith was relying on the look-out man;' but afterwards he said that he did allege some default on the part of Capt. Smith. I then asked him, 'Did you put any question to Capt. Smith indicating that you were going to blame him so that he might have a chance of explaining?' Mr. Bateson's answer was, 'I do not think there was any question put directly to him in that form, but he tells us what he did, and that was quite sufficient for us,

when he told himself what he did. He has not excused himself from telling the pilot what was going on. The fact was he did not know, he could not tell the pilot; he did not know.' And finally he said, 'The point is a want of information; the pilot was not kept informed of the real position of the 'Hawke.' The pilot was the person who could and ought to have kept himself informed of this.

"There is not a particle of evidence that the collision was caused partly by negligence of other persons for whose negligence the owners are liable. It may be very desirable that the law as to the defence of compulsory pilotage should be altered. I have on previous occasions expressed my views as to that. I may add that the Departmental Committee appointed to consider the question unanimously recommended the abolition of the owners' immunity. But it is for the legislature to make the law. My function is to declare and administer it as it now stands.

"The authorities as to the existing law are clear. The collision here was due solely to the faulty navigation of the pilot, and there is not a shadow of foundation for saying that the negligence of any of the owners' servants partly caused it. The owners of the 'Olympic' therefore succeed on the defence of compulsory pilotage.

"I have now dealt with the whole case. As it is one of great importance, I wish to say expressly that the Elder Brethren, who have given me assistance which I value highly, are in complete accord with all the findings which form the basis of this judgment. The result is that the action against Commander Blunt fails, and he is entitled to judgment.

"In the other action, although the collision was brought about by the negligent navigation of the 'Olympic,' the pilot is solely responsible for that; and accordingly judgment must be entered for the owners of the Olympic upon the defence of compulsory pilotage."

#### The Costs

Mr. Laing submitted that on his lordship's judgment the proper order to make would be no costs on either side.

Mr. Bateson argued that, these being cross actions, the "Olympic's" action should be dismissed with costs and the Admiralty's action without costs.

The President said he had given some consideration to this matter already. He would give Commander Blunt 50 per cent of his taxed costs in the action brought against him, and there would be no costs on either side in the other action.

Mr. Laing then submitted that the evidence on the suction theories came from far afield at great expense, and that the 'Hawke' had not established that issue and ought to pay the costs.

Mr. Bateson said his lordship had in terms found in his judgment that the "Hawke" was sucked by the "Olympic."

The President said he did not think he had put it quite so boldly or bluntly as that. It was a matter for the taxing master, and in view of the allegation that the "Hawke" starboarded it was quite right to raise the issue.

What an object lesson for the United States and the Dominion of Canada, still favoring compulsory pilotage, which under present rulings, in the opinion of this publication, is faulty from many viewpoints, including navigation in rivers, natural narrow waterways and inland canals, unless we sufficiently revise our laws to the extent that whenever an accident occurs, while a vessel is in put in charge of compulsory pilotage, the state or province employing these pilots should be made answerable for the amount of damage caused by the pilots so concerned, as soon as Admiralty Courts have proven incompetent action of navigation by a compulsory pilot.

While in the Trans-Atlantic service I vividly recollect

certain company's rulings in regards to pilotage which stated that the master would always be held responsible for an accident to his ship in pilot waters, with the exception of the ..... and ports of Great Britain, in which respect I can vouch for the responsibility and competency of the men who shaped these rules and their knowledge of customs in foreign ports.

I therefore maintain to state that no matter how efficient a pilot may be, no man in this profession in the variety of class of vessels, on board of which he ever changingly serves in this capacity, can possibly become as competent in the individual vessel as the master is of the ship he commands, of which he is proud, which is endeared to him and the qualities of which he knows better than the cavalier knows his own horse.

The service of a pilot is always valuable, in coastwise as well as in off-shore trade; in fact, it is a necessity, when approaching ports where local knowledge is imperative, or in waters and channels in which the vigilance and responsibility compels the master to keep long bridge hours, often beyond human endurance. However, a pilot should never be solely in charge of a vessel, but act only as assistant to the master. Compulsory pilotage, in many of our Coast States, is unfortunately intimately allied with political power and interests, which dominate and which, in many other directions, is a detriment to business interests in general and their expansion.

In illustration of the above fact, I am reminded of entering San Francisco harbor in June, 1905, commanding the finest, largest and most modern ship afloat under our flag. The owners paid \$1,003.75 pilotage, which, according to the rulings of this port, is based on a 4-cent registered tonnage basis and \$5.00 per foot draft. The draft amounted to 27 feet mean, on which a reduction of 25 per cent was granted, presumably due to some understanding with the owners.

The pilot, a pleasant old gentleman, proposed to enter the harbor through the south channel, to which I objected, and the ship passed through the north channel. After leaving the quarantine anchorage and cautiously proceeding along the water front towards the dock of destination, the pilot became somewhat nervous. Perhaps the ship, in close proximity of shore line in crowded waters had, in his opinion, grown somewhat in size, and he allowed too little headway for a heavy ship to maneuver satisfactorily in strong tidal currents. In response to my eager request in regards to the action of the tide and strength of current, the wharf, at which the vessel was ordered to dock, was pointed out to me, the maneuver performed without a hitch or any excitement, much to the relief and anxiety of the well-meaning pilot.

I have since and often felt that the owners should have saved at least two-thirds of this exorbitant expense of compulsory pilotage, for the service of which the individual as well as the State, in the writer's opinion, would have been amply rewarded.

In the "Olympic"-Hawke" case his lordship explicitly remarked: "It may be very desirable that the law as to the defense of compulsory pilotage should be altered; I have on previous occasions expressed my views as to that."

In this connection Pacific Marine Review is eagerly looking forward to the result of the decision in the appeal, and predicts that British legislation will, in the near future, without a shadow of a doubt, take the decisive action in relation to the change of the law regulating compulsory pilotage, and what the first maritime nation of the world decides in this respect should become our slogan. An object lesson has been given, with more to follow in the future. Let us act and act without reluctance. E. F.

#### PACIFIC COAST SHIPPING CONDITIONS FROM A FOREIGN VIEWPOINT

The subjoined correspondence was received from a prominent foreign steamship company, in which we in particular refer to:

- A. Pilotage and other high costs at San Francisco.
- B. Possible trade results in connection with the opening of the Panama Canal.
- C. Panama Canal toll proposals.
- D. The oil fuel question.

—Ed. Note.

"In reply to your favor of the 20th inst., we beg to remark that our business in the past year has been carried on with satisfactory result, although rates to North Pacific have been very low.

We have ordered five cargo boats of 12,000 tons dead weight capacity each, which are now building.

No experience of an extraordinary character has been made in the course of 1911, and as far as we see, there is no reason to anticipate such in the coming year.

Trade should remain satisfactory, unless unforeseen disturbances set in.

The despatch of our steamers has been as customary during the last years, great delay being occasionally suffered, especially at the smaller ports of South America.

Some anxiety is felt about the custom house despatch at Valparaiso, in case the amount of cargo to be cleared by the custom house should increase.

Despatch in Central America has been very unreliable, as usual.

A. No special reason for complaint has been given in Californian or Puget Sound ports. The pilotage at San Francisco remains unreasonably high, and this, together with other high costs, handicaps this port somewhat, as owners avoid to call if possible.

B. We cannot judge about the influence of the Canal of Panama on our trade, the more so, as this will depend to a high degree upon the efficiency of the Canal and the duties levied for its use. We are under the impression that expectations as to the development of trade to South and Central America upon the opening of the Canal run rather too high and that parties who count upon an immediate increase of trade may experience some disappointment. Apart from a possible temporary boom, trade will depend upon the development of the countries concerned, which requires both time and absence of political disturbances.

C. We are of opinion that whatever tolls be charged in the Canal, there should be no difference established between American and other ships, neither direct nor indirect. Furthermore, it would be a mistake if shelter-deck steamers were handicapped by the measurement regulations of the Canal, as is at present most unreasonably done by the Suez tariff.

D. Oil fuel is, of course, superior to coals in many directions, and will oust coal in every trade where it can reliably be had at reasonable prices. We are watching the progress of oil fuel on the Pacific with keen interest, and regret that conditions of the transatlantic trade do not justify its adoption so far.

The Hamburg-American Steamship Company pays 9 per cent dividend for 1911, against 8 per cent in 1910, out of a profit of 44,000,000 marks in 1911, against 40,000,000 marks in the previous year. The board proposes to increase the capital by 25,000,000 marks, making it 150,000,000 marks, on account of the great increase of traffic on all lines and the possibilities created by the opening of the Panama Canal.

The company spent 30,000,000 marks on new ships last year.



### STEAMSHIP MERGERS PRESENT AND THOSE LIKELY TO BE

Rumors from authentic sources point towards the consolidation of the Kosmos Line with the Hamburg American Steamship Company, which should not surprise us in the least, since large steamship interests all over the world amalgamate with surprising activity.

Herr Ballin, of the Hamburg-American Line, is on his way to Panama, in the interests of the large company he represents as its head, and is likely to continue the voyage across the Isthmus to Pacific Coast ports.

Mr. E. J. M. Nash, representing the Royal Mail Steam Packet Company, has lately been visiting Vancouver and other Coast ports to study the possibility of new trade, which may open up on the completion of the Panama Canal.

The recent merger of steamship companies in Great Britain placed this company at the head of 280 steamships, aggregating 1,287,950 tons. The companies merged are the Royal Mail Steam Packet Company, the Elder-Dempster Company, the Lamport and Holt Company and the Union Castle Line.

Mr. J. Bruce Ismay, president of the International Mercantile Marine Company, is coming to the Pacific Coast from New York to make personal investigation of the trade and port facilities. We have repeatedly heard of the rumors in regard to negotiations with the Pacific Mail Steamship Company, which rumors appear now to gain strength, although confirmation of this report is still lacking.

In the re-transferring of the S. S. "Kroonland" and "Finland" to the United States flag, every great steamship company of the world is looking to this Coast in view of the Panama Canal opening, and no small interest is paid in relation to the toll issue which is eagerly awaited by all interested.

### INTERNATIONAL MERCANTILE MARINE COMPANY OF NEW JERSEY

Organized June 6th, 1893, Under the Laws of New Jersey,  
U. S. A., as the International Navigation Company;  
Name Changed 1st October, 1902

We are indebted to Mr. Herbert Stoneham, a member of the London Stock Exchange, for the subjoined interesting analysis.—Ed. Note.

London, 13th January, 1912.

This company holds (directly or indirectly) practically all the capital of the International Navigation Co., Ltd., the Societe Anonyme de Navigation Belge-Americaine and Oceanic Steam Navigation Co., Ltd., the Atlantic Transport Co., Ltd., the Atlantic Transport Co. of West Virginia, the British and North Atlantic Steam Navigation Co., Ltd., and the Mississippi and Dominion Steamship Co., Ltd., and a majority of the capital of Frederick Leyland & Co., Ltd., and of the National Steamship Co., Ltd., together with the shipping business of Messrs. Ismay Imrie & Co., and Messrs. Richard Mills & Co., the system thus comprising the American, Red Star, White Star, Dominion and Atlantic Transport lines and a controlling interest in the Leyland and National lines.

Number of vessels owned by the company and subsidiary companies, 209; aggregate gross tonnage, 1,151,038 tons.

Authorized capital is \$120,000,000, in shares of \$100, half being 6 per cent cumulative preferred and half common, all of which has been issued and is fully paid, but at December 31, 1910, \$10,608,265 common and \$8,269,029 preferred were in the company's treasury.

There are also:

\$18,393,000 5% first mortgage (Sinking Fund) gold bonds of \$1,000 each (outstanding balance of \$20,000,000 authorized), principal repayable February 1st, 1929, but the company have the right of calling the bonds for redemption at par (now) at any time, and a Sinking Fund is provided.

\$52,744,000 4½% mortgage and collateral trust gold bonds, part of a total authorized of \$75,000,000, with interest payable April 1 and October 1, and the principal repayable October 1, 1922, at par, the company having right to call the bonds for repayment (now) at 105%.

#### Accounts Made Annually to December 31

For 1905—

Surplus after meeting interest charges, including amount transferred from Insurance Fund of \$897,052 .....	\$3,787,900
Amount of debit balance brought forward .....	1,537,748

\$2,250,152

Appropriated for depreciation on steamships .....	2,000,000
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Balance .....	\$ 250,152
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For 1906—

Surplus after meeting interest charges, including balance brought forward and \$791,958 transferred from Insurance Fund .....	\$5,278,906
Appropriated for depreciation of steamships .....	5,000,000

Balance .....	\$ 278,906
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For 1907—

Surplus after meeting interest charges, including balance brought forward and \$441,660 transferred from Insurance Fund .....	\$4,321,637
Appropriated for depreciation of steamships .....	4,000,000

Balance .....	\$ 312,637
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For 1908—

After meeting interest charges and without providing for depreciation, there was a loss, after deducting balance brought forward, of .....	\$2,479,689
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For 1909—

After meeting interest charges but without providing for depreciation, there was a profit of .....	\$1,182,334
--	-------------

Reducing the debit balance to .....	\$1,297,354
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For 1910—

After meeting interest charges there was a profit of .....	\$4,849,580
Less debit balance of .....	1,297,354

\$3,552,226

Appropriated to depreciation of steamships .....	3,503,640
--	-----------

Leaving balance of .....	\$ 48,586
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The total appropriations for depreciation during 1905 to 1910 amount to \$14,503,364, or £2,900,728, representing on the 1,151,038 aggregate tonnage controlled by the company £2.10.4 per ton, which seems very little allowance for such a large and heavily capitalized fleet. The appropriation for a sinking fund for redemption of first mortgage bonds is also equivalent to writing down the book value of the ship.

No doubt in common with other steam shipping companies, this company's earnings are likely to show a considerable increase.

The preferred stock dividend being cumulative, a very large amount of arrears have accumulated, no dividend having been paid on these shares since the formation of the company.

It is rumored that a dividend is likely to be paid in the early part of this year on the preferred shares, the present price of which is \$22.50 for the \$100 share.

To pay 1% would require \$600,000, which, at mar-

ket price, would yield .....	Per Cent.
To pay 2% would require \$1,200,000, which, at	£ 4. 8.10
market price, would yield .....	£ 8.17. 8
To pay 3% would require \$1,800,000, which, at	£13. 6. 8
market price, would yield .....	

# PACIFIC MARINE REVIEW

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## THE STRANDING AND SALVAGE OF THE C. P. R. LINER "EMPRESS OF CHINA"

**T**HE accident which so unfortunately befell the S. S. "Empress of China" and her Master, Capt. R. Archibald, who always will have Pacific Marine Review's fullest appreciation as to his skill, ability and general traits as a commander and gentleman, has been given sufficient publicity by the press and our contemporaries, as the somewhat meager reports reached our shores at intervals from the Far East, and which on this side of the boundary was followed with more than passing interest.

Since the "Empress of China" has been successfully salvaged, it may be of interest to review this case in concrete form, not only in regards to the cause of the accident and the damage to the ship, in connection with the peculiarity of the Japanese Coast, but also as to the able manner in which this vessel was finally and successfully salvaged.

The writer greatly rejoiced in the exoneration of Capt. Archibald from all blame as to the cause of the stranding, in particular so since the accident occurred after a score of years of eminently faithful and successful command of his ship and at a time when he was considering his well earned retirement from a profession for which he is particularly well fitted.

How intimately attached a master becomes to the ship he commands, how closely the ties are woven and into what strong substantial links, through the finer feeling of man in this profession with the mute, docile ship in his charge, can never be appreciated by the layman, nor the perhaps prejudiced member of the press, who with assumed authority sometimes condemns, without the slightest knowledge of a sphere in which he would truly appear the laughing stock of a deckboy. I have used the following expression in previous editorials, which appropriately applies in this case: "Responsibility is a word devoid of meaning to all save those who have to bear it!"

No one can possibly realize this better than those who have gone through the better part of their lives in saddle, active and loyal in and to a profession in which today there is so little to gain and so much to lose, those who have not only gone through similar experience, but who have gone through experiences of more disastrous nature.

The affection I have spoken of is, as often before, again proven by extracts from a personal letter by Capt. Archibald to the writer, which is pathetic from every view-point. (The vessel up to the present writing is still

in the hands of the underwriters.) The letter is dated Vancouver, January 15th: "If the "China" is taken over by the C. P. R., I am going out on the S. S. "Monteagle" to join her again and watch the repairs. \* \* \* Of course, as far as I am concerned I would like to see them repair her and would like to bring her back once more to this port, after all she has withstood, as you can readily understand my feelings."

As a retired shipmaster, in possession of sensibility on these subjects, with appreciative regards for one who stranded with his vessel under circumstances which no human power, skill and foresightedness could possibly overcome where the fine vessel the writer had the honor to command became a total loss some years ago by a margin of only several hundred feet to the eastward of the stranding of the S. S. "Empress of China," I have undertaken to review the accident of the C. P. R. liner.

A naval court to investigate the stranding of the C. P. R. "Empress of China" was called at the instance of the master, Capt. R. Archibald, on Thursday, August 17th, at 9:30 a. m., at H. B. M.'s consulate. The members of the court were: Mr. Thomas Harrington, Vice-Consul General, Robert David Owen, master of British merchant ship "Ajax," and Godfrey John Coldwell, master of the British steamer "Socotra." Mr. R. Boulter of the British Consulate acted as clerk of the court. Mr. N. W. Melvor watched the proceedings on behalf of the C. P. R. Company and the captain, while Mr. W. T. Payne, general agent for Japan and China of the C. P. R. Company, was also present.

Finding and order of this naval court, held at the British Consulate-General, Yokohama, on the 17th day of August, 1911, to investigate the circumstances attending the stranding off Nojima, on the 27th day of July, 1911, of the British steamship "Empress of China," of London, official number 98953, while on a voyage to Yokohama, and the cause of such stranding, and to inquire into the conduct of the master certificated officers and crew of the said vessel are as follows:

It appears from the evidence given before the court that this vessel sailed from Vancouver on or about the 14th day of July, 1911, bound for Yokohama (on the way to Hongkong), with general cargo and mails and a crew of 242 hands all told, as well as 181 passengers.

That Inuboyesaki was passed about midnight on July 26th after heavy weather approaching typhoon force earlier in the day. That after passing Inuboyesaki a proper course was set to continue the journey past the land at Katsuura. That the said course and the subsequent changes of course to the time of stranding were such as to constitute a more than ordinarily safe track along the coast. That the calculated position of the vessel at the moment of striking worked out according to the records in the log book and the evidence of the master and the first mate as to the course, was about eighteen miles to sea from her actual position on the rocks at Nojima. That subsequent to losing sight of the light at Inuboyesaki no land was seen till after the vessel struck, nor was any light seen at Nojima.

That the master and officers of the watch knew of the existence of explosive fog-signals at Nojima, that neither they nor the lookout, nor the quartermaster at the wheel, heard any sound thereof, and that they had consequently no warning from this source as to their proximity to land. That the early hours of July 27th were foggy at intervals, and that besides the fog at sea a band of dense smoke or mist enveloped the land into the appearance of another band of fog.

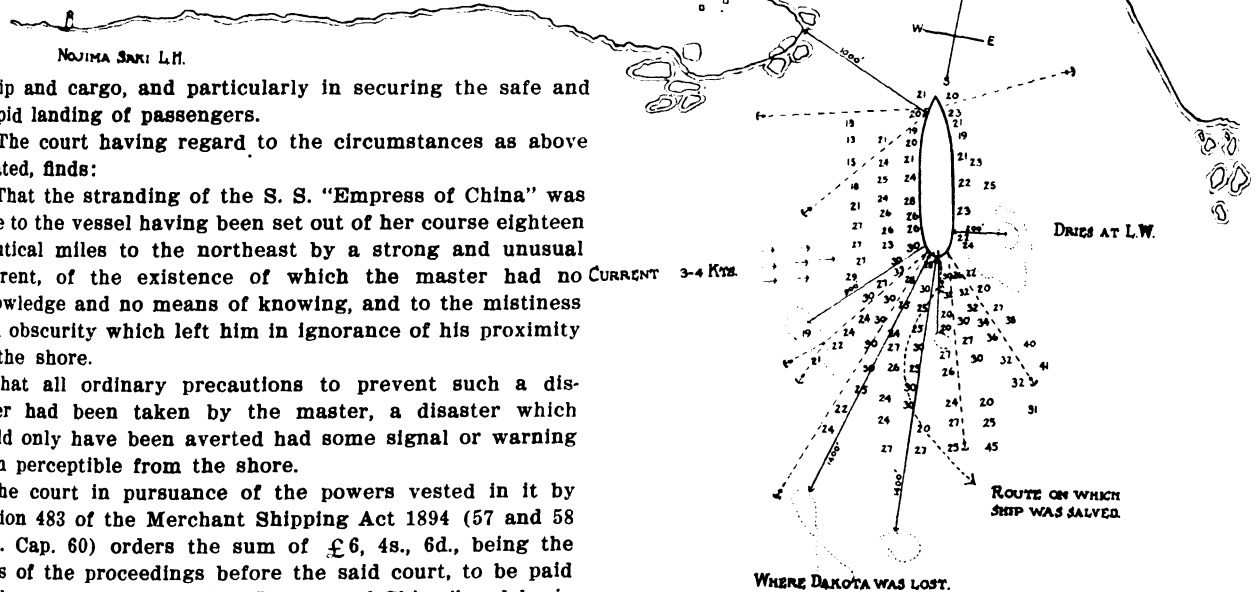
That the shore along this part of Japan is subject to varying and uncertain currents subject to sudden and severe changes after a strong storm such as it is a mat-

ter of common knowledge to the court occurred with exceptional violence off that coast of Japan on the 26th of July.

That the "Empress of China" was well found and off-iced, the watch properly set, and every precaution taken in speed, sounding, lookout, etc., that seamanship could suggest.

That after striking, so far as the evidence given shows, everything proper and necessary was done by the master, certificated officers and crew in the interests of the

The bearing of Nojima L. H. from the ship when stranded was L87W true, distance one and one-fourth miles, anchors were laid out ahead and astern and a few



ship and cargo, and particularly in securing the safe and rapid landing of passengers.

The court having regard to the circumstances as above stated, finds:

That the stranding of the S. S. "Empress of China" was due to the vessel having been set out of her course eighteen nautical miles to the northeast by a strong and unusual current, of the existence of which the master had no knowledge and no means of knowing, and to the mistiness and obscurity which left him in ignorance of his proximity to the shore.

That all ordinary precautions to prevent such a disaster had been taken by the master, a disaster which could only have been averted had some signal or warning been perceptible from the shore.

The court in pursuance of the powers vested in it by section 483 of the Merchant Shipping Act 1894 (57 and 58 Vict. Cap. 60) orders the sum of £6, 4s., 6d., being the costs of the proceedings before the said court, to be paid by the master of the S. S. "Empress of China," and he is hereby ordered to pay the said amount accordingly.

Dated at the British Consulate-General, Yokohama, this 17th day of August, 1911.

(Signed) THOMAS HARRINGTON,

H. B. M. Vice-Consul, Pres. Naval Court.

ROBERT DAVID OWEN,

Master Steamship "Ajax," 113,395.

GODFREY JOHN COLDWELL,

Master Steamship "Socotra," 106,612.

During the time the "Empress of China" stranded off Nojima Saki, two steamers experienced abnormal set of currents, caused by typhoon disturbances. Capt. Valentine of the P. & O. S. S. "Oriental," on a voyage from Yokohama to Kobe, a distance of approximately 350 miles, reported that the vessel under his command between Rock Island and O'Oshima, a distance of about 300 miles, was set off shore 29 miles and the commander of a French mail liner, belonging to the Compagnie des Messageries Maritimes stated that between O'Oshima and Rock Island his ship was set out twenty-three miles on a voyage from Kobe to Yokohama.

Thus the same abnormal currents which prevailed on the south coast of Japan were felt with greater velocity on the east coast from Inuboyesaki to Nojima Saki, a distance of approximately 120 miles and the currents which took the above mentioned vessels off shore took the "Empress of China" on her southerly course in shore, meeting with disastrous results. An accompanying small sketch of the coast line in the direct vicinity of Nojima Saki with its visible and submerged rocks, carefully obtained soundings, indicating the depth of water in feet, current arrows, the direction of currents in this vicinity (strength of from three to four knots per hour) is produced in this article and may be of particular interest in accurately showing the position of the "Empress of China" and astern of her, the submerged Kuikone Reef, on which the Great Northern Steamship Company's S. S. "Dakota" became a total loss on March 3rd, 1907.

days after the accident the ship never altered her position and although the small accompanying sketch is not quite the scale, the lighthouse is placed in the approximately right position from the vessel. The nearest rocks were about 1,000 feet off. Some two months after the stranding, the distance from shore was spanned by a wire cable set up by sheers, fully thirty feet clear of the sea, which proved for those on board the stranded vessel a convenient safeguard in bad weather. Great tribute is due to the Mitsui Bishi Company of Nagasaki, which performed the salvage work with the able assistance of Capt. Archibald and his staff, consisting of the chief and third officers, who with the master for a period of three months, remained on board with the salvors. Two typhoons passed over the ship, one towards the latter part of August and the other in the month of September. One can easily understand and appreciate the strenuous times for those on board during the heavy weather which on many occasions cut off all shore communication, owing to the high breaking sea in which the ship pounded heavily. Naturally all salvage operation under such weather conditions had to cease and the task of finally and successfully floating the liner was indeed connected with extreme difficulties, but nevertheless splendidly performed on December 12th, after a period of four months and one-half.

The vessel was firmly imbedded and surrounded by rocks, with too shallow water for floating out, necessitating the blasting of a channel through the rocks into deeper water, which procedure of direction is shown by a line in the sketch. The inspection of the hull in Uruga drydock proved extensive damage. From number two hatch all the way aft the plating is more or less corrugated for about three plates high on either side of the keel, of which seventy feet was found broken away. The stern post is fractured in one place about ten feet up, all

propeller plates more or less damaged, spectacle piece on both sides cracked, but not one plate fractured, which is indeed more than remarkable, taking into consideration the heavy pounding the ship was subjected to in its exposed position during two typhoons. Above the turn of

the bilge, the hull of the ship as viewed from the dock is intact with all masts and gear in position. The upper structure, only in regards to interior fittings is naturally more or less damages. What a credit to her builders!

E. F.

## INTERNATIONAL CONGRESS OF NAVIGATION

**A** CONCEPTION of the interest which is being awakened throughout the country in the Twelfth International Congress of Navigation, which will convene in Philadelphia May 23d, 1912, is given by the list of those who will act as patrons, many of whom have also signified their intention of attending the sessions.

President Taft is head patron and honorary president of the congress and will preside at the opening session. Among those who will act as patrons are cabinet officers including Secretary of State Knox, Secretary of War Stimson, Secretary of the Navy Meyer, Secretary of the Treasury MacVeagh, Secretary of the Interior Fisher and Secretary Nagel of the Department of Commerce and Labor.

Governors of many of the states are included. Since the first Conservation Congress the interest of the governors of the states in matters such as those which will come before this International Navigation Congress has been far more keen than it formerly was, and besides lending their official names it is expected that many of the governors will be present at the sessions.

Numerous senators, including Senator Burton, whose mastery of the subject of waterways development is admittedly greater than that of any other member of Congress, and also many members of the House, have added their names to the list.

The interest on the part of the great corporations of the country is indicated by the large number of names of presidents of these great enterprises.

It is evidently recognized by leaders in all branches of activity throughout the nation that besides the opportunity which it affords to welcome and entertain the world's leading authorities on all maritime subjects, this congress will be of vast importance to the material interests of the country. The complete program plainly shows how intimately the deliberations of this great congress will touch upon important city, state and national undertakings and upon projects which will be given a new impetus by the opening of the Panama Canal.

The congress will be divided into two sections. The first will consider these subjects:

Improvement of rivers by regulation and dredging, and, if needs be, by reservoirs. Determination of the case in which it is preferable to resort to such works rather than to canalization or the construction of a lateral canal.

Dimensions to be assigned, in any given country, to canals of heavy traffic. Principles of operating. Dimensions and equipment of the locks.

Intermediate and terminal ports. Best methods for combining, facilitating and harmonizing the transfer of freight between the waterway and the railway.

The following communications will also be considered in this section:

Applications of reinforced concrete to hydraulic works.

Report on the works undertaken and the measures adopted or proposed for the improvement and development of lines of inland navigation, as well as for the protection of the banks of navigable highways.

Utilization of the navigation of large but shallow rivers. Vessels and motors.

Ocean navigation will be taken up by the second section of the congress and these problems will also be discussed:

Means for docking and repairing vessels.

Dimensions to be given to maritime canal. (Technical

point of view. Probable dimensions of the sea-going vessels of the future.)

Mechanical equipment of ports.

Communications will be considered in the second section on the following subjects:

High-powered dredges and means for removing rock under water.

Report on the most recent works constructed at the more important seaports, especially on those relating to breakwaters. Applications of reinforced concrete; means for insuring its preservation.

Bridges and ferry bridges; tunnels under waterways used for ocean navigation. Economic and technical study.

Safety of navigation. Lighted buoys.

Each of these questions will be treated by the leading waterway engineers and maritime experts of the world.

At the close of the congress parties of these visiting engineers, most of whom come as the representatives of their governments, will make visits of inspection to the leading works of improvement throughout the country. Many will take the opportunity to view the colossal work on the Isthmus. American cities which are to be visited are already completing their arrangements for the reception and entertainment of the visiting engineers.

An international agreement which shall fix a standard depth of water to which the important harbors of the world should be improved is forecasted in reports which will be laid before this congress. This is one of the questions which will doubtless result in extended discussion by the world-famous experts who will be in attendance. This touches directly upon proposed great expenditures for the improvement of the leading harbors of the United States.

To what degree shall American seaports make possible the continued expansion in the size of ocean liners? For the problem of the size of the great ocean carriers and the problem of the depth of the great Atlantic ports are obviously dependent one upon the other. Again both of these have their direct bearing upon the question of the dimensions which are to be given to maritime canals.

Some indication of the direction which this important discussion will take in the coming international congress is given in the report of C. E. Grunsky, a well-known consulting engineer of San Francisco. In this important report, the papers of six distinguished engineers who are authority on the dimensions to be given to canals, are summarized.

Mr. Grunsky is of the opinion that if the deepening of the harbors and of harbor approaches is continued without restriction, the size of ocean liners will continue to increase. He makes plain that the growth of vessels exerts a strong influence upon the concentration of export and import business at certain ports where adequate facilities for their entrance are provided. He points out that it naturally follows that it is to the interest of the port which is less favored by natural conditions that some artificial limit be set to the size of ocean carriers, particularly in the matter of draft, so that in any scheme of harbor deepening there may be reasonable certainty that the depth will be adequate for future requirements. Mr. Grunsky maintains that there should be an international agreement fixing the depth of water at low tide in important harbors and that there should be no government aid in the form



of subsidy or otherwise to vessels whose dimensions are such as to make the entrance into a harbor of standard depth impossible.

For the United States to lend encouragement to the building of vessels of so great size that they cannot pass through the locks of the Panama Canal would, he declares, be an unwise policy. By the construction of the canal and the dimensions given to locks he contends that the government has practically set an extreme limit upon the dimensions of vessels which it can encourage. He points out that the canal and the lock system have cost too much to be easily changed. The lock length of the canal is now 1,000 feet, the width 110 feet and the depth of water over the sills of the lock gates is 41.5 feet. This is equal to 40 feet draft in salt water. It is contended that this absolutely fixes the maximum size not only of warships, but of all other vessels to be constructed by the government or with its aid.

It is altogether likely that this view of the great problem of ocean liner construction will raise in the coming sessions of the congress the question whether the government can consistently set a limit upon the size of vessels without also fixing the same limit in the improvement of its harbors.

In the report of Mr. Grunsky it is pointed out that the placing of a limit upon the size of seagoing vessels by international agreement would by no means put an end to improvement of shipping. Even if the limit of size were reached there would still be room for improvement. The internal combustion engine, which is one of the great developments, promises to be of material aid in increasing cargo capacity; furthermore, because of this gain in cargo capacity is obtained without any increase in displacement or draft. The development of speed also could go forward even if size were restricted.

Mr. Grunsky will make recommendations to the congress along this line.

C. Leemans, an Amsterdam authority on this and like questions, declares that the increase in the size of vessels in recent years is such that the technical and financial difficulties of harbor dimensions, especially the question of draft, have become in several cases almost insurmountable. The interests of the ship owner, he says, must take only a secondary place. Ship owners and constructors, he declares, must in future undertakings take this problem into consideration.

The far-reaching significance of these questions and their bearings upon development now proposed or under way will lend unusual interest to the coming congress. That this interest is felt as deeply in Europe as in this country is clearly shown by the notification which the general secretary, Colonel J. C. Sanford, is receiving from European engineers who are to attend the sessions. Virtually every great European port, including Hamburg, Antwerp and Rotterdam, will send their great engineering authorities. It is now assured that the attendance from European nations will be very large.

What size do these men believe vessels of the future will attain? C. Leemans, an eminent engineer of Amsterdam, predicts that a few years will see vessels of 70,000 and 75,000 tons traversing the ship lanes of the North Atlantic. In a generation he believes there will be ocean leviathans of a hundred thousand tons plying between Europe and North America. This sized vessel, he says, will have a length of 1,500 feet, a width of 160 feet and a draught of more than 50 feet. Mr. Leemans will present an interesting paper on this subject at the Navigation Congress.

E. L. Corthell, a celebrated engineer of New York, who will also discuss this subject at the congress, coincides with Mr. Leeman's view that vessels will continue to in-

crease greatly in size. His predictions are based on tables worked out from past increases and from the economic advantages of larger ships. He believes that vessels of 1,100 feet length for 1948 is a modest prediction.

At the eighth International Congress of Navigation in 1900 at Paris, Mr. Corthell predicted that before 1923 there would be vessels afloat of 765 feet length, 80 feet breadth and 31 feet draft. This prophecy was received with amusement by other members of the congress, and Mr. Corthell was called the "Romancer of Navigation." Just seven years later the Cunard Line put in service two vessels, the "Lusitania" and "Mauretania," which exceeded the dimensions predicted in every respect.

The "Olympic" and "Titanic" of the White Star Line have a length of 883 feet and are 45,000 ton vessels, while the Hamburg-American Line is building in German shipyards two liners of 56,000 tons each.

The future size of both merchant and war vessels has an important bearing on the size necessary for canals. Mr. Corthell points out that important ship canals should be large enough to accommodate the largest vessels afloat, because even the merchant vessels are liable to be impressed into service by their governments in time of war.

The German government is now paying dearly for constructing its Kaiser Wilhelm Canal too small. This canal was built in the years 1887-95, requiring eight years to complete. In less than fifteen years it became inadequate, so that the largest vessels were compelled to go around the Cape Skagen route. Now the canal is being enlarged at enormous cost in order to accommodate Germany's merchant and war fleets.

The Suez Canal is also being deepened, the Canal Company recently being compelled to borrow 150,000,000 francs for this purpose. Herr von Thierry of Berlin, a noted expert on this subject and a member of the International Technical Commission of the Suez Canal, will discuss this phase of the question at the congress in Philadelphia. He agrees with Leemans and Corthell that the size of vessels is likely to increase and that canals must be enlarged to accommodate them.

Among others who will present papers on probable dimensions of seagoing vessels of the future and required dimensions for maritime canals are M. Quellenec of France, chief engineer of the Ponts et Chaussées and consulting engineer of the Suez Canal Company; Mr. Vandervin of Antwerp, Mr. J. Foster King of Glasgow, Scotland; M. Zamiatine, a naval engineer of St. Petersburg.

#### PORTLAND BERING SEA SERVICE CONTEMPLATED

The Transportation Committee of the Portland Chamber of Commerce are contemplating the desirability of establishing a direct steamer service from Portland to Bering Sea ports in Alaska. The situation is being investigated, and from present indications sufficient tonnage will be guaranteed to meet the requirements of the E. J. Dodge Steamship Line, whereby they will give direct service from Portland to Bering Sea ports this summer. This, it is understood, will in no way interfere with the present service maintained by that company from Seattle, but is additional service which Portland has been anxious to obtain for many years.

As our readers are doubtless aware, Portland now furnishes considerable tonnage, moving via rail to Seattle for transfer to steamers, and for which Portland receives no credit. People in Portland are anxious to open up transportation connection direct with Alaska, and with the campaign now inaugurated it is expected next year to reach all Alaska ports with Oregon freight, as well as trans-continental freight.

## MARKET REVIEW

## Canned Salmon.

We publish herewith extracts from the annual report of the canned salmon market by Messrs. Anderson & Colman, Ltd., 5 Philpot Lane, London, Eng.:

**Salmon.**—The demand for salmon of all grades has been very good, indeed, during 1911.

**Alaska Reds.**—Business opened early in January at from 25s 3d to 25s 6d ex wharf, and this price remained unchanged until the end of May, when 25s 9d was made. From that time there was a steadily rising market and prices rose to 26s 9d at the commencement of August, 28s 6d at the end of August, 29s 6d in early September, 30s in late September, and 30s 6d in October, which price was maintained until the first arrivals of the 1911 pack, when the price eased off to 29s 6d in consequence of goods arriving at an inconvenient season.

The history of the business during 1911 is very similar to that of 1910, except that the quantity available for the United Kingdom was even more reduced than in 1910. The extremely small deliveries to an already depleted market caused most of the dealers to be only able to deliver a portion of the orders which they had booked forward, and left them with nothing to sell, so that those dealers who did not sell so freely ahead and consequently have some stocks available are now, at the end of the year, asking anything up to 31s and 31s 6d for their goods, and naturally they are not finding any market until it has been established that the consumer will take the goods on this basis of price.

According to our figures not more than about 260,000 cases of the 1911 pack of Alaska Red Salmon have been secured for the European markets. The balance of the pack has been used in the United States. The American buyers did not secure enough of the 1910 pack for their requirements, and found it necessary to re-import a considerable quantity of that pack from the United Kingdom in 1911, and in order to avoid a recurrence of this necessity they secured all that they could get of the 1911 pack and would gladly have bought the about 260,000 cases reserved for Europe if it had not been that the packers themselves preferred to have some of their goods distributed in our markets, and in many instances they sold goods to the United Kingdom at at least 1s 6d less than they could have secured for them in the States. They naturally anticipate that there will be years in which they will have a surplus of goods to sell, and they consider it wise to keep open an outlet here for this purpose.

**Alaska Pink Salmon.**—In view of the shortage of Red fish all over the world, special attention has, this year, been devoted to pink fish. Pink Salmon runs in alternate years, and the run during 1911 was expected and proved to be a good one, and the packers decided to avail themselves of the opportunity and to pack enough pink fish in 1911 to carry them over the season of 1912, in which, according to all precedent, there will not be a good run. They were influenced in making this decision by the fact that the pink fish has been steadily gaining favor amongst the consumers of the United States, not only upon its merits, but also on account of its price.

Before the season opened it was the packers' intention to put a price upon pink fish which would enable it to be imported into this country at about 14s 9d to 15s, but the demand proved to be so good for various reasons that the price was ultimately fixed at from 17s 9d to 18s 6d, and the goods sold freely on this basis both in the United States and in the United Kingdom, and although prices have not yet been raised there is a very strong feeling in favor of putting them up early in 1912.

**British Columbia Sockeye Salmon.**—The year 1911 commenced with very small stocks, and the prospect of only a very moderate pack. The exceptional summer and the relatively cheap price of salmon as compared with other articles of food caused these stocks to very rapidly disappear, and buyers used every effort to secure contracts for the 1911 production of the British Columbia canneries. Business was done early at from 37s 6d to 39s 6d for ½-flats, while 1-lb. flats were offered at 32s 6d, but very few buyers responded. As the season advanced the price of ½-flats steadily increased and firm contracts for supply became more and more difficult to obtain. The price for 1-lb. flats also increased, notwithstanding the fact that buyers were neglecting this size. In the meantime the demand continued so good that spot stocks were getting very low. When the packing was finished the position became very acute; a great many of the contracts which buyers had entered into produced no goods at all, and the canners who had unsold goods raised their prices to from 44s to 45s for half flats, while spot stocks were easily saleable at 46s to 46s 6d.

Considerable quantities of ½-flats were turned over at these prices and according to our information canners were bought right out. Notwithstanding the high prices which were being paid for the 1911 pack, many buyers were compelled to still further augment the cost by hurrying goods overland because their warehouses were absolutely empty of salmon.

The 1911 pack was practically a failure so far as 1-lb. flats were concerned, with the result that the few parcels available were eagerly bought at about 35s to 36s.

So far as we are able to ascertain the above prices have not yet checked the consumption sufficiently to enable the present stocks to meet the demand until the arrival of the 1912 pack, and as the 1912 pack will, according to precedent, be, at the best, a very small one, it will be very difficult to avoid a further augmentation of values at the commencement of the year.

One-lb. talls have been a negligible quantity, as there have not been enough of them to make a market.

**British Columbia Pinks.**—At the commencement of the year the spot value of tall tins of Pink Salmon was 21s, with the result that when British Columbia canners offered to sell a proportion of their Pinks, at 14s 9d for tall tins, and 21s 3d for ½-flat tins they found a considerable number of buyers ready to avail themselves of their offers, and although the contracts were generally not for very large quantities, yet there was a steady business done in Pink Salmon at prices gradually rising from 17s 9d to 18s 3d for talls, and 23s 6d for ½-flats. Very few 1-lb. flats were packed.

**Chums** have been quite an interesting market, because in the same way as the Pinks have had to replace the Sockeyes for certain trades, so Chums have had to replace the Pinks for some markets to which the advanced price of Pinks made them prohibitive. The price of tall tins of Chums opened at about 13s and advanced to 16s for British Columbia and 17s 6d for Alaska.

This is a review of the year 1911, and we do not desire to try to anticipate 1912, but it is impossible to ignore the fact that out of the total pack of 5,350,000 cases in 1911, the European markets did not secure more than 800,000 cases of all grades and shapes, notwithstanding the high prices which they have proved themselves willing to pay. Of the above 5,350,000 cases, 1,800,000 cases were Pinks.

In all probability not more than 600,000 cases of Pinks will be packed next year, so that assuming that the 1912 pack in other respects will be equal to the 1911 pack, it will amount to 4,150,000 cases, which will, according to all

the information we can get, come on to practically bare markets, and this prospect gives little hope of prices receding, and considerable anxiety that they will increase.

It looks as though we cannot hope for any easing of the situation until 1913, which should be a good year for both Red and Pink fish.

The imports from all sources into the United Kingdom have been during:

1906 .....	about 1,233,000 cases
1907 .....	" 501,500 "
1908 .....	" 677,400 "
1909 .....	" 823,300 "
1910 .....	" 1,428,000 "
1911 .....	" 850,000 "

London stocks of Salmon are very small, and those reported as being in warehouse in Liverpool at the end of last November amounted to 125,155 cases as against 241,217 cases in November, 1910. The arrivals in December will probably bring the stocks at the end of the year up to 180,000 cases, as against 245,000 at the end of 1911.

#### FREIGHTS AND FIXTURES

We publish beneath the monthly freight report prepared by Messrs. Hind-Rolph & Company for Pacific Marine Review:

San Francisco, Cal., February 6th, 1912.

We beg to advise that freights have continued extremely firm, especially for steamers, for which rates have been paid on a higher basis than for many years past, and the fixture of the "Robert Dollar" on time charter, from this coast to the Orient, at 7s net, on the deadweight shows the remarkable state in which the freight market is at the present time.

Other steamers have been fixed for the Orient at only slightly under above rate, while for Australia several steamers have been fixed at up to 5s. 6d. on time charter.

Sailing vessel freights continue firm, but without showing any of the abnormal features of the steam market. It appears to us that the outlook, generally, is in favor of continued firmness in the freight market.

The most interesting of recent fixtures in addition to that of "Robert Dollar," mentioned above, are the S. S. "Harpagus," on time charter, from this coast to Orient at 7s.; S. S. "Artemis," on time charter, delivery, San Francisco and redelivery at Australia, for nine months, at 5s 6d.; S. S. "Beckenham," time charter, delivery and redelivery at Comox, B. C., for four months, Alaska trade, 6s. 6d.; two "Strath" steamers, delivery at Comox, B. C., and redelivery at Sydney, N. S. W.

Sailing vessel fixtures of interest are "Kirkcudbrightshire," Portland, Ore., to Europe, 32s. 6d., wheat; "L'Hermitte" and "Bossuet," Portland to Europe, 31s. 3d., wheat; "James Tuft," lumber to Sydney, 43s 9d., option of Brisbane, 46s. 3d., or Chile at 52s. 6d.; "Amaranth," lumber to Chile at 52s. 6d., less 2s. 6d., which last two fixtures indicate about current rates today.

#### HIND-ROLPH & CO. AGENTS FOR UNION STEAMSHIP COMPANY OF NEW ZEALAND, LTD.

Messrs. Hind-Rolph & Co. advise us of their appointment as general agents of the Union Steamship Company, Ltd., at San Francisco.

The service of the Union Steamship Company is performed by the steamers "Tahiti," "Manuka" and "Aorangi," which are all of the highest class, fitted with wireless telegraphy, equipped with every convenience for comfortable travel, well ventilated, fitted with electric lights and fans, and provided with ample refrigerating chambers.

These vessels are appointed to sail from San Francisco to Australia and New Zealand via Papeete and Rarotonga every twenty-eight days, and are under contract to carry mail. Stoppages include Papeete and Rarotonga, which

provide pleasant breaks in the voyage, the contract being performed in the fast time of twenty and one-half days.

The latest addition to this line was the "Tahiti," a magnificent ship of 12,000 tons displacement. The dimensions of the ship are 460 feet long, 56 feet wide and 24.4 feet deep. On her trial trip she developed 10,000 indicated horsepower and maintained a mean speed of 18.53 knots. The "Tahiti" is up-to-date in every respect, and cabins with private bathrooms and sitting room adjoining can be obtained. Her cold storage space for meat and butter, etc., is over 500 tons of 50 cubic feet.

#### CANADIAN FISH & COLD STORAGE CO., LTD.

Prince Rupert, B. C.

This company has practically completed its plant at Prince Rupert, B. C., approximating in value \$1,500,000, and on part whereof, as recorded at the time of procurement in the Pacific Marine Review, the company receive a subsidy of 3 per cent under the act to encourage cold storage.

The company, wherein Sir William MacKenzie, President of the Canadian Northern Railway, Mr. James Carruthers, a director of the Dominion Bank of Canada and a large grain merchant of Montreal; Mr. Andrew Kelly, President of the Western Flour Mills Company of Winnipeg and Toronto, and other prominent Canadians are shareholders, and which is associated with powerful London finance as well as with experienced fishing interests in Grimsby, will have one of the finest and most complete cold storage plants on the North American continent.

The company will engage in all classes of fishing, but principally halibut, cod and frozen salmon for the Canadian, United States and European markets.

The Managing Director of the company, Mr. George H. Collins of Vancouver and Prince Rupert, who has been identified with several previous and successful large enterprises in British Columbia and in other provinces of Canada, is now in London, accompanied by Mr. Greer Starratt, the company's General Manager, and formerly manager of the New England Fish Company at Vancouver, arranging for the construction of steam trawlers, etc.

The company's immediate programme includes the construction of four steam trawlers as used in the North Sea fisheries, to special specifications to cover requirements in Northern British Columbia fisheries, providing for both trawl and line and dory fishing, which will cost approximately £8,000, and 12 steel 90-foot fishing launches, propelled by gasoline or oil driven engines, and Wilcox water tube boilers of 400 h. p. each, built at the Babcock & Wilcox works at Glasgow, supplied through their Montreal branch, erected by their agents, Messrs. Chas. C. Moore & Co. of Seattle, and which the company's Managing Director, Mr. George Collins, reports were selected chiefly by reason of their recommendation by the Pacific Marine Review.

H. B. J.

#### ST. PAUL FIRE AND MARINE INSURANCE COMPANY

The annual statement of this well and favorably known American insurance company shows the usual progress, although in a greater degree. The assets of the company, amounting now to over \$8,000,000, show an increase over 1910 of \$995,644.11; the reserves were increased by \$608,021.54, and the net surplus was increased by \$301,661.39, making the surplus as of December 31st, 1911, over \$2,348,000. Messrs. M. C. Harrison & Co., San Francisco are the general managers for the Coast for marine business, and they maintain fully authorized underwriting offices in all the important ports on the Coast.

The marine premiums written by the St. Paul Company on the Coast amount to a little more than \$165,000 for the year of 1911, putting the company in the foremost rank of marine underwriters.

## THE WILLIAMS SYSTEM OF TELEPHONY AND TELEGRAPHY

**C**ONTRARY to the present practice of using an insulated cable for the transmission of intelligence under the ocean by electricity, the Williams System embraces a cable, the core of which is in conductive access to the sea.

For telegraphic purposes, in certain cases, an absolutely naked wire may be used. For talking, the wire is placed in metallic contact with the water in a certain manner. In each case the effect is to minimize the dominant obstacle to long distance telegraphy, and the factor that limits telephonic speech to but a few miles—electrostatic capacity.

Two distinct sets of electric impulses are used—a pilot current, and a communicating current. The function of the pilot current, a current that does not enter into the act of talking or telegraphing, is to keep a constant stream of charged ions on the exposed conductor; and it is during the deposition, neutralization and clearing away of the products of the ionisation that the telegraphic or telephonic impulses travel undamped to the far end of the wire.

The system will permit telephonic speech over distances heretofore impossible under the sea, and enables the attainment of far greater speeds in cabling, which was in a small but very effective way demonstrated on Saturday, February 3rd, on Vashon Island. A Williams cable of eleven miles in length has for this purpose been laid from the north end of Vashon Island to Portage, through which messages were transmitted both by telegraph as well as telephone, which tests proved highly satisfactory, and of the many who witnessed the experiment, including representatives of the United States Signal Corps Service, cable engineers of the U. S. C. S. "Burnside" and members of the faculty of the University of Washington, beside other various business interests, were amazed at the success of this novel invention, on which congratulations were heartily extended. Pacific Marine Review was on this occasion represented by the writer.

We reproduce herewith extracts from papers read during this demonstration by the inventor, Mr. Alfred Williams, of 1612 Ravenna boulevard, Seattle, which may prove of interest to our readers.—Ed. Note.

When the status of the whole civilized world—and the uncivilized, too, for that matter—was changed by the discovery of the electric telegraph by Morse and Wheatstone, at once technical men and a host of experimenters turned their attention towards the possibility of telegraphing across the seas. To the uninitiated the matter seemed simple enough. If it was possible to send the electric current over hundreds of miles of wires fastened to insulators on poles above the earth, why, then, not under the sea? True, it would be necessary to protect the submerged wire with some substance that would act as an insulator, something to prevent the electricity leaving the wire through the water until it had arrived at the distant end. But with this accomplished, the insulating coating found, the rest should be simple. So it was reasoned.

But telegraph engineers found that no suitable insulating material lay at hand. Of course, many insulating substances were known, but none possessed in addition to a dielectric quality sufficient elasticity and mechanical strength to resist the action of moving water and heavy pressure, and as a consequence of this difficulty arose the school of bare wire telegraphy.

The brilliant work of the German professor, Steinhill; the American inventor, Morse, and that of that wonderful old Scotchman, John Bowman Lindsay, opened the way for experimentation in this direction. These bare wire systems were based upon the fact that on entering the earth a current of electricity does not seek a straight and near

path back to the distant earth plate, but instead it spreads over large areas, distributing itself through every path open to its passage and in direct proportion to the resistance offered by that path.

In a paper read by Professor Sylvanus P. Thompson, of London, before the Electrical Congress at Chicago, in 1893, he says that "It is contrary to the scientific spirit of progress to admit that any art or application of science can stand still, or that any of its developments are final. To bridge the ocean by an electric telegraph was a mighty achievement. To speak through a wire the audible syllables of a language was a marvel. To signal 500 words a minute automatically was a bewildering accomplishment."

Over long distance submarine cables telegraphic impulses today can be sent at the rate of an average of some twenty words per minute, provided that for every dot or dash sent one of an opposite polarity is sent into the cable to neutralize the stress caused by the signalling impulse. But, telephonically, little distance can be attained; merely a few miles.

Having reviewed the matter so that our minds are refreshed as to what has passed, I will proceed to the more immediate description of the principles underlying my system.

As we have seen, an electrostatic condition can only be caused by the intervention of a non-conducting body—a dielectric—between two conducting bodies—a watery cloud and the earth, the intervening dielectric being dry air; two sheets of tinfoil separated by a plate of glass; or the copper wire of a submarine cable insulated from the surrounding sea by gutta percha and rubber. Naturally it will occur to any one that if the dielectric be removed from a cable then the wire can possess no capacity—at least only a negligible capacity. But here one is met with leakage of the current, an evil worse than the capacity, inasmuch as it is irremediable. At least it appeared so. Comparatively recent experiments conducted by Dr. O'Shaughnessy, Mr. Melhuish and other officials of the British India service with a view to establishing communication across the broad Indian rivers by the agency of bare wires, were all abandoned as impracticable for this very reason—the leakage of the current being so great as to limit the signalling distance to one out of proportion to even the heavy current used—some quarter of a horse power over a distance of a mile in some cases.

In reading over the details of these tests, and at the same time bearing in mind the views of the older time experimenters, Morse, Lindsay, Wilkins, Steinhill, and a host of other bare wire enthusiasts, it seemed to me that when a zinc plate was connected through a telegraphic key to a bare copper wire—the zinc and wire being immersed in an active electrolyte such as sea water—that no matter how far the wire ran, hundreds or even thousands of miles, there absolutely must be some kind of molecular stress that would travel through the wire to the farthestmost end. With this idea in view I experimented on such a system. Of course, I ran across the expected phenomena—for a very short distance a needle, balanced in a magnetic field would respond to the make and break of the key. But beyond this very short distance nothing took place other than the exasperating effect of polarization, when the needle would move with great slowness, its journey needing not only seconds but minutes. Under such conditions telegraphic communication was impossible, however patient one might be in waiting for the needle to assume its zero after a prolonged signal.

During the succeeding years, the result of much test work, a mass of more or less unrelated data came to light, all tending to show just what took place in the far reaches



of the bare wire. And early last year, in the sea at West Seattle, using a No. 24 bare copper wire, I found that it took just three minutes for a current to charge to full saturation a wire 1,200 feet long. This was due to the length of time necessary for the migration of the hydrogen ions released from the sea water by the current.

Bearing this in mind, let us consider just what takes place. All conductors of the first class, metals, etc., permit the passage of electricity through them without any permanent molecular change. Heat is evolved by the passage of the current, but as soon as it is dissipated the wire is molecularly—at least, as far as we know—in exactly the same state as before the current started. On the other hand, conductors of the second class, all liquids that conduct electricity, all electrolytes, decompose during the transfer of electricity through them. This law is invariable; one of the most absolute of electrical laws. If an electric current will not resolve a liquid into its constituent parts, or cause it to form combinations foreign to its normal state, then it is a good insulator. Paraffin, alcohol and carbon bi-sulphide, for instance.

Now we know that no charged body can pass from one medium to another without setting up some radiation or some change in direction or speed. Similarly, something must happen in the etheric space just at the contact of a metal with a liquid under the passage of a current.

But whether the premises are right or wrong, one thing is sure—something takes place at the point of contact; something must. Atoms of water possess inertia, they take some time to absorb the electric charge, and a greater time to rearrange themselves as charged ions on the surface of the metal. In the dark room I have studied such movements by a method of making the migrations of the ions visible to the eye, and although no individual group of molecules, or even their results, could be separately detected, there is not the slightest question in my mind that their aggregate retardation was visible.

But whether we accept this as a theory or not, at least it suffices as a working hypothesis, and my practical experiments have developed results explicable only on this or some similar theory.

What takes place in the earth when electricity enters it at one point and leaves at another? Suppose, instead of the electrode being a large copper plate it is replaced by a wire presenting to the ground an equivalent area, and at the same time stretching away in a straight line—what happens? The stream lines of current, instead of leaving the plate in a dense mass, will then run down the line, passing to earth as they travel, growing weaker and attenuated in the distance. Though the sum total of electricity is practically the same in each case, the fields of force described by the flow through the earth is different—radically different. In the latter case, the case of the elongated wire, the field is represented by a drawn out ellipse. Now, suppose we wish to increase the minute current which arrives at the far end of the buried wire; what would we do? More energy—more battery power is the answer. And we are again face to face with the old problem—the brick wall that confronted early workers—the impracticability of using large quantities of current. But there is another way of accomplishing this result. That is, by increasing the distance between the points at which the current enters the earth—by moving the ground plate "B" further back. This done, the field is made still more elliptical and more energy will be received. Now, if we apply this system to the propagation of electricity over bare wires it will help considerably.

Such a circuit as this, but in a much modified arrangement, is the line stretched on the ocean bed from this room to the north end of Vashon Island. Not laid in a straight course, owing to the desire to keep the line in

deep water and avoid rocky ground, the distance is about eleven miles. The line is of common house fixture wire. No. 14, B. & S. gauge, and the copper is placed more or less in contact with the sea along its entire length by stripping off the insulation. In some places the exposure is large, others smaller, but all of the insulation has been perforated electrically or mechanically. Where this was not done intentionally, to conform with a certain amount of absolutely essential leakage, the tides and their attritions have done the rest. Curious as it may seem to you, the more this stripping occurs to a certain extent, the better are the results. This is plainly evident from the fact that the telephonic voice grows stronger daily. Naturally, had I been laying a permanent cable, provision would have been made to expose the maximum amount of wire to the action of the sea necessary to give the best results. Likewise the covered portions would have been protected by mechanical means. . . . The resistance offered by these eleven miles of wire to the passage of the current from one end to the other is about 140 ohms; that is, 140 ohms would be its resistance if in air or insulated from the sea. But the wire is not insulated from the sea, and the result is that if one attempted to telephone over this line by use of telephone equipment as used in practice today, little, if any sound at all would be heard. Certainly no conversation could be carried on. The reasons are, first, that the resistance of the bare wire to the sea is so low that nearly all of the current would leak; and, secondly, that the gaseous ions deposited on the wire would set up a retarding polarization. . . . Now, this question of polarization, that is, polarization evident under the conditions named—and a vastly different thing from that of the electro-chemist in the laboratory—requires a little explanation. We must bear in mind that the fall of potential along such a line—unless modified by the means that constitute a portion of this system—is very steep. In fact, at a short distance away from the transmitting station, so great is the leakage to sea, the voltage would fall to a point too low to disassociate water. And as water, in common with all electrolytes, can only conduct by virtue of its decomposition, it is evident that when the potential drops below the solution pressure of hydrogen, then no further leakage can take place. What happens, then, is most complex. Unable to get out, the current does not travel with the speed of electricity along an insulated wire. It acts much like the discharge of a condenser through an immensely long and very fine wire. Its speed is roughly—though I do not wish to be quoted as being at all specific on this point—my figures are merely based on experience with the eleven hundred feet of bare wire at West Seattle—in the neighborhood of a mile in fifteen minutes. Certainly not sufficient to satisfy the gentlemen of the telegraphic profession present here. And if the telegraph engineer with his wavs of great length and low frequency, experiences such difficulties, how much greater is the problem of the telephone engineer with his frequencies of one thousand and more per second? Not only is this polarization present below the voltage needed to split up the hydrogen molecule, but to a less degree it is apparent whenever current is sent over bare wires; and present in sufficient intensity to render quick signals impossible.

To get around this difficulty I use a current which, for want of a better word, I have termed a "pilot current." In wave form, undulating, waxing and waning, but always operating, the pilot travels the line from one end to the other. At the bare portions of the wire it leaks out according to the law of derived circuits, modified somewhat by the molecular changes of resistance it sets up when passing to the sea. Its form and frequency are such that the impulses it produces in the telephone at the distant station

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are of too low a frequency to affect the human ear. Therefore, no sound is heard in the telephone. It will occur to you to ask why its potential does not fall below the critical point in regard to hydrogen, and thereafter set up the polarization effects so deadly to further travel. Perhaps it does—I do not know, and have no instruments capable of proof—but whatever takes place in the far reaches of the wire the latter is rendered immune from further retardation.

Just what happens at "the windows"—the bare sections—when the current carrying the voice or the telegraphic signals meet the pilot it is hard to state lucidly in a short paper. As I said previously it takes an appreciable time for the ions of the sea that take part in the conduction of the current to rearrange themselves conformably to the new conditions of the perpetual changes of the pilot current. The time is very minute as we count time, but great compared with the speed of electricity. And it is during this time, during the condition made by this chemical inertia that the vibrations produced by the voice "sneak over," so to speak. At the same time the electrostatic stresses, the strain in the dielectric of present cables—at least insofar as it is present in lines such as this one—manage to work their way out. Telegraph current—long wave length may embrace one or more pilot waves. This is one solution of what takes place, though very likely the pilot impulses in some not obvious manner neutralize what would, if allowed to grow, develop into retardation. Nor does the work done by the pilot—the clearing of the cable of what makes for trouble—cease as the pilot is thrown out of operation. Some seconds pass before the effects wear off; and in case a pilot of a second type, one that does not assume a wave form, the benefit is apparent for a considerable time. This second class pilot, chiefly used for telegraphic signalling, and by no means good for telephonic work unless used in conjunction with the other, performs much the same function as the "go-devil" in an oil pipe line—it clears the way when conditions are at their worst—when the line has been out of operation and grown "cold." For instance, in commencing the day's work conversation is generally impossible until the undulating pilot has been applied for some minutes. But if, first, the second type pilot is sent out for two or three seconds, then the undulating pilot is put to work, talk is possible at once. Nor is this the effect of metallic oxides or carbonates deposited on the copper where the shallower water permits of the action of occluded air. This explanation, the one that first occurred to me, is erroneous, as tests made with wires inert to chemical action in the sea have proven. Rather is it caused by a clearance of something within the wires—something as you well know takes place when a circuit lies dormant and is allowed to tune itself to whatever static or other electric condition surrounds it—plus the movement given to the stationary ions gathered on the bare portion of the wire.

Now, a word regarding the cable itself. Instead of using rubber, gutta-percha, etc., all very expensive substances, on the insulated portions, it is far better to use much cheaper material. Given a covering of mechanical

strength, the dielectric quality is practically immaterial. This brings in the utilization of one of the many substances known to the electrical profession that has the advantage of cheapness. And when we consider that about one-half the cost of a submarine cable lies in the insulation it is a point of considerable importance in a commercial sense. Again from a commercial standpoint comes the question of speed. As far as I can see at the present, it seems as if the limitation of speed is one only of the receiving instrument. Just what the telegraphic speed would be over a distance of three thousand miles, that is across the Atlantic Ocean, it would be hard to say, though at a conservative estimate, it is safe to say that the speed will at least be as great as that of automatic machines on land lines.

As to the distance that telephonic speech could be transmitted, I am confident that I am well within the limit when I say that the system will make possible talk between New York and Europe. This same line over which you are about to talk, using the identical arrangement as withing this box on the table and that of the controlling pilots of the sending station at Vashon Heights, if extended from here to Juneau, Alaska, some seven hundred miles, would give the same clear speech provided slight alterations were made in the transformers.

In fact, studying the matter from all standpoints, and even considering the effect of self-induction in or around the copper wire itself, I can see no insurmountable obstacle in the way of talking around the world. Mere resistance of wire counts for little. It is quite easy to hear articulate speech through many millions of ohms when electro-capacity is out of the question; and in the case of cables and pilots as used on this line electrostatic capacity is a quantity that can be ignored.

### MOORE & SCOTT'S OIL BURNING SYSTEM PROVES A SUCCESS.

The Norwegian steamer "Jason" was recently converted into an oil burner at the yards of Messrs. Moore & Scott Oakland, and the results obtained on her three hours' trial trip proved the new oil burner a success. The "Jason" had been plying between Chinese ports, but was chartered a few weeks ago by the Jebesen Company for service between San Francisco, Mazatlan and other ports along the Mexican coast.

Considerable interest was taken in the installation of Moore & Scott's Improved High Pressure Oil Fuel System aboard the "Jason," as several ship owners on the Pacific Coast are considering the advisability of converting coal burners into oil consumers.

The old style of burning oil was accomplished by using either steam or hot water to throw the spray of oil over the firebox, but the new high pressure system is worked by heating the oil in a coil of pipes until it reaches the temperature of 250 degrees, when it is spread over the furnace by its own force.

The S. S. "Jason" is only one of the "several steamers" that the Jebesen Company intends operating on the West Coast run.

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**OUR SUBSCRIBERS' VIEWS**

**I**N relation to Pacific Marine Review's Editorial appearing in the January issue under the heading of "U. S. Hydrostatic Tests and Boiler Construction Compared With Other Nations," we are in receipt of the following correspondence:

"I read with much interest the excellent article on the United States Hydrostatic Test and Boiler Construction as Compared With Other Nations. This has always been, as you are aware, a very knotty question with shipowners, and I must congratulate you on the able manner in which you have reviewed the matter. I had the opportunity of meeting Mr. Skentelbery from Boston, who was on his way to Washington on behalf of the Boston Chamber of Commerce, who are advocating an entire revision of the United States shipping laws, which from my experience requires undoubtedly remodelling."

T. R.

"The article in your last issue on Inspection and Tests of Marine Boilers should be of interest to shipowners, builders and engineers, especially the remarks referring to hydraulic tests. In looking for reasons why a hydraulic test, higher than the working pressure, should be applied, it must be considered that a boiler consists of a great number of different parts, and in putting them together every rivet, seam, stay, etc., may be under a varying strain. The object of hydraulic test is to gradually equalize all those strains, until, when the test pressure is reached, all these parts will be brought up to a uniform strain. To do this under steam would manifestly be somewhat dangerous, but a hydraulic test is quite safe, water having no elastic or explosive force.

"Such a gradual equalization test takes an appreciable time, and in my experience I have found that boilermakers prefer to make their own tests for this purpose, and at their leisure, before they call on the inspector for the official test.

"The same principle is clearly shown in testing chain cables. When a chain is taken from the forge to the testing machine it takes quite an appreciable time (from 20 to 30 minutes) to equalize the strains in the different links until the test load is reached. The subsequent test takes only a few minutes, until the test load is reached, showing that all the 'stretch' has been taken out of the first test.

"Referring again to boiler tests, it must be evident that a test load of double the working pressure is better adapted to secure uniformity of strain, than an excess of only 50 per cent; also that this test pressure does not need to be applied again, unless such repairs are made as would again require an equalization of strains. For ordinary occasions such an annual inspection, a test equal to the working pressure should be sufficient, and even that might be left to the inspector's discretion.

H."

New York, January 27, 1912.

"Captain E. Francke,

"Pacific Marine Review, "Seattle, Washington.

"Dear Sir:

"I have read with great interest the article in the last

issue of the Review on that useless and ancient requirement of the law compelling vessels to carry a drag.

"I have heard many discussions engaged in by those whose experience makes them competent to judge of such matters, and the unanimous opinion of all is, the thing is utterly worthless for the purpose intended, and should be stricken from the statutes as entailing a useless unnecessary expense.

"Section 4488 Title LII, of the U. S. Revised Statutes which requires a Drag, also requires ocean and lake passenger-carrying vessels only, to have their boats fitted with an improved detaching apparatus, in order that in times of emergency they may quickly launch their boats to save life; while freight and inland passenger vessels traveling our waters when the traffic is more congested, and the liability to accidents from collision, etc., is greater than in ocean going vessels, are exempted. Is there any good reason why this discrimination should be made in favor of one class of vessels, by providing them with the means of saving the lives of their passengers in times of accident, as against another class, whose liability to accident is greater, and where there is just so much need for the use of boats in one class of vessels as in the other? If there is, I fail to see it; nor can I see why a device for saving life is not as essential on one class of vessels as on another, both having lives to save and protect when necessary.

"Instances of loss of life on freight vessels, taken from the records of the several inspection districts, might have been prevented by the use of a device for quickly detaching their boats. Numbers of instances are known where freight vessels running across others in distress have hesitated to lower their boats, knowing well they could not unhook them.

"In conclusion, the law as it reads now contains a distinction without a difference, and the sooner it is amended so as to include all class of vessels, above a certain tonnage, the better.

JAMES RICHARDSON."

The Victoria, British Columbia, Board of Trade.

"Capt. E. Francke, Victoria, B. C., February 1, 1912.

"Editor Pacific Marine Review, "Seattle, Washington.

"Dear Sir:

"At this writing am unable to suggest anything which you could add to your article on port improvements at Victoria in the January issue of the Pacific Marine Review. We have not yet received word of the progress Mr. Louis Coste, C. E., has made with his plan and recommendations he will submit to the Government of Canada. It is, however, quite possible that they have already been submitted to the Minister of Public Works and as soon as approved we will promptly be furnished with full particulars. One thing is certain and that is the Government's intention to immediately commence work on harbor improvements at Victoria, for the sum of \$500,000 has been placed in the Federal Estimates for that purpose.

F. ELWORTHY.

Secretary."



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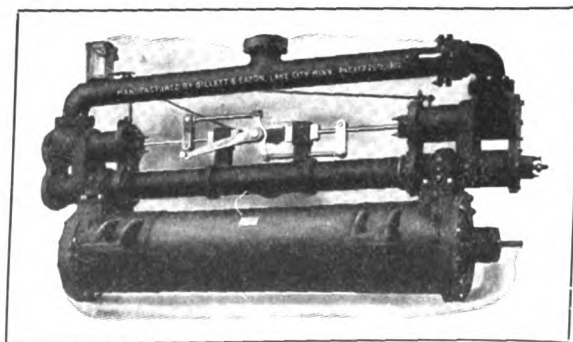
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### AN OPEN LETTER TO BOILER, TANK AND STACK MANUFACTURERS OF THE UNITED STATES AND CANADA

Brooklyn, N. Y., Jan. 22, '12.

As Legislation is about to be taken in several of the United States, and a number of Provinces in Canada, it behooves Boiler, Tank and Stack Manufacturers, as well as the Manufacturers of material used in the construction of these several lines to take cognizance of the coming Convention of the American Boiler Manufacturers' Association in New Orleans, La., March 12th to 15th inclusive, at which time an effort will be made by the A. B. M. A. to take up and decide upon uniform specifications.

This organization has always stood for practical laws to protect the public, as well as honest and conscientious Boiler Manufacturers.

Its first action in 1889 was to establish the specifications for boiler steel and their material and construction which have become the standard by the general concurrence of Manufacturers and Engineers.

Its efforts to pass uniform laws in various States have proved futile, and an educational campaign was resolved upon in 1898, and the Association in convention at St. Louis unanimously adopted the uniform American Specifications. These have been utilized by Engineers and Builders in stating their requirements.

In 1907 Massachusetts adopted a code of Boiler Rules in general consonance with these specifications. This code has been adopted by several States since, and is likely to be very generally enacted throughout the country. It is important that any imperfections or crudities in these rules should be frankly criticised by practical Boiler Manufacturers, with a view to perfecting the code and eliminating the effects of unjust or ill-considered legislation.

Any individual or firm in one State would be at a disadvantage in combating an unfair bill, but deliberate and carefully considered endorsement of fair rules, or equally emphatic condemnation of unfair or extreme requirements by a body such as the A. B. M. A. with its prestige of a quarter of a century working in these lines must and will have great weight with intelligent legislators everywhere.

You cannot have failed to observe that when a matter of this kind is adopted by one State the legislation is promptly followed by similar actions in other States.

The principles of conservation and regulation are among the most vital interests now under discussion by the American people, and it devolves upon you as practical and honest Boiler Manufacturers, and all Manufacturers and Supply Houses, supplying boiler material to see that this tremendous vital force is properly guided by correct information such as you can supply.

We cannot urge too strongly your attendance at the coming Convention in New Orleans, March 12th to 15th inclusive, and request you to send your name to the undersigned Secretary of the Supplymen's Association, so that accommodations and arrangement for your entertainment can be made while in New Orleans.

(Signed) F. B. SLOCUM,

### BRITISH COLUMBIA MERCHANT SERVICE GUILD

The formative meeting of the (proposed) British Columbia Merchant Service Guild will be held on Wednesday, 21st day of February, 1912, at 8 p. m., in the offices of Messrs. James & Jarvis, Bridgman Bldg., 1007 Government St., Victoria, B. C., and all captains, pilots, officers, and other nautical gentlemen are urged to be present if possible; both in the interests of themselves and their profession.

The objects for which the meeting is called are as follows:

(1) To form a strong and thoroughly representative Guild in British Columbia, consisting of all the certificated Captains, Pilots, Officers and other qualified nautical gentlemen within the Province, for the purpose of securing for the local nautical community—by lawful measures of a conciliatory nature—proper representation, consideration, and recognition, both, in the framing and application of the laws under which the profession is governed, and in the adjustment and settlement of matters effecting the local profession as a whole, or the professional status of any individual member thereof.

(2) To organize and establish in British Columbia, through the medium of the proposed Guild, a body of highly skilled and practical nautical gentlemen whose advice and judgment upon local marine matters, would in time become invaluable to the entire shipping community of this Province.

Owing to the existence in the local profession of certain grievances, including those in connection with the recent unnecessarily drastic suspension of certain shipmasters and officers' certificates, and the unsatisfactory composition of the local courts of inquiry sitting in judgment upon cases involving same, it is self-evident that some such an organization as the proposed Guild has become essential to the best interests of each individual member of the local profession, and must necessarily become more so, as time advances.

By united, rational, and well directed effort on the part of such an organization, it is obvious that such matters could be more effectively dealt with, and more speedily remedied, than is possible under existing conditions.

It is, however, essential to the success and usefulness of the proposed Guild that the following points should be agreed upon, strictly carried out, and where necessary, embodied in the Constitution:

(1) That the Guild shall be founded upon sound principles, and that it shall be developed along strict business lines.

(2) That it shall be a strictly non-political organization, and thereby free to perform its work without fear or favor.

(3) That its various efforts and actions to remedy existing grievances shall be carried out firmly, but with a dignity worthy of the profession it represents.

(4) That the policy of the proposed Guild, while progressive in all matters effecting the profession or its members, shall always be of a nature which strives to promote and maintain the most cordial relations with the various shipping companies and owners, and which aims at earn-

ing for the Guild the high confidence and respect of all departments, organizations, and persons with whom it may have dealings.

(5) That the Guild shall be entirely self-governing—a strong Executive Committee being elected from among the leading members of the local profession for this purpose.

(6) That immediately the Guild is strong enough it shall provide those of its members who abide by the Constitution and Rules with efficient legal defense in cases involving the cancellation or suspension of members' certificates.

(7) That the Guild shall justify its existence by using every legitimate means at its disposal to bring professional grievances before the notice of the responsible authorities, and shall by every legal measure exert its influence to have same remedied.

(8) That the Guild shall include in its membership those already belonging to similar smaller organizations so that the interests of the entire local profession are consolidated and represented by one powerful association instead of by small units widely separated.

(9) That the Guild should endeavor to become affiliated in certain measure with the Imperial Merchant Guild of Liverpool, but at the same time this should be accomplished in such a manner that the exclusive right to formulate its own policy and to adapt its operations to local conditions is reserved.

To place the Guild on a sound financial basis and to insure its being in a position to act almost immediately, it is suggested that the annual membership subscription for Captains and Pilots should be not less than \$25, and for Officers not less than \$15. It is further suggested that all persons joining within three months after the date of incorporation should only be required to pay the above membership fees, but those persons desiring to join the Guild after the expiration of the said period should be charged an additional \$10 as entrance fee. H. G. JARVIS, Honorary Organizer (proposed) Merchant Service Guild of British Columbia.

#### SALVAGE OF TREASURE AT SEA

On the S. S. "Delhi," running in the P. & O. Line and which went ashore some three months ago while on passage from London to Calcutta, was a lot of specie valued at about \$1,400,000. The specie was taken from the steamer and placed in custody, apparently before any real attempt at salvage of the ship and balance of the cargo had been made. The P. & O. Line are demanding security for the salvage and general averages charges to the amount of 30 per cent of the value of the specie, and some discussion has arisen as to whether or not the specie should be considered on a par with the other cargo or should escape charges incurred subsequent to its own preservation and pay only the expenses of its own removal.

On this question "Fairplay" has the following:

"The salvage of the specie from the 'Delhi' has given rise to a considerable difference of opinion among underwriters and brokers. By some it is contended, if the specie is salvaged now and efforts are made to save the ship, and after considerable expense has been incurred the result is fruitless, the specie saved will have to bear its own expense of salvage, together with the expense connected with the ship, or, in other words, general average. On the other hand it is contended that general average is something done to save ship, freight and cargo—for the benefit of the whole venture—and that the relief of the ship from the weight of a few pounds of gold and silver was not done to save the ship, but to save the specie. In *Kemp v. Halliday* it was laid down that 'the general safety must be the motive for the sacrifice, and if made with any other object it can give no claim to a general average contribu-

tion.' The *Royal Mail Steamship Company v. English Bank of Rio* was a case where the plaintiff's steamer ran aground, and the specie was put into the ship's lifeboat and taken ashore; the master then began to jettison cargo and the plaintiffs claimed general average on the arrived specie. The court found that the specie was removed, not to secure the common safety, but simply for the purpose of saving the specie."

It is a fundamental principle of salvage and general average that, unless there are some extraordinary circumstances, all parties to the venture must share and share alike; that is, that the first package of cargo taken from a stranded ship must share in all of the salvage expenses to the same extent as the last package salvaged. If it were otherwise the idea of community of interest would be destroyed.

With specie, however, it is frequently claimed that a different method of apportionment should be adopted. On the one hand it is claimed that the commodity is of large value, occupies but small space, is of comparatively little weight, and is usually carried in such a part of the ship as to be easily gotten at. That by relieving the vessel of this small weight does not lighten her or make the efforts to float her any easier, and that therefore it should be considered a thing apart and bear only the expense of saving itself. On the other hand, it is contended that it is a part of the cargo and must bear co-jointly with the other cargo the expenses arising from a peril common to all, and it is further contended, as rather a remote condition, that the removal of the specie contributes to the ultimate saving of the ship and the remainder of the cargo by removing from the mind of the master any fear he may have regarding the safety of so much value which could easily be stolen, thus leaving a clearer mind to grapple with the problems remaining.

In the case of the "St. Paul," decided in this country in 1897, it was held that no distinction can be made in the proportion of the salvage award charged against different portions of the cargo and the specie must bear the same pro rata charge with the rest of the cargo. In this case the specie was saved at the same time the other cargo was being removed. Salvage operations on the ship were carried on after all of the cargo had been removed, and the salvage award was apportioned as between ship and cargo, making the salvage charges general on the ship and entire cargo up to the time the entire cargo was discharged. It was shown that the specie was saved as a thing by itself, at but little cost, and that the removing of that part of the cargo did not and could not affect the physical conditions surrounding the ship and the balance of the cargo.

In the case of the "City of Para," 1896, the circumstances were somewhat different. In this case the steamer went aground and the specie and bullion on board were saved before any salvage operations looking to the safety of the ship and remaining cargo had commenced. The court held that in this case the community of interest had ceased and that the treasure was not bound to contribute to subsequent salvage operations.

In *MacAndrews v. Thatcher* the judge said: "The liability to general average continues until the property has been completely separated from the rest of the cargo, and from the whole adventure, so as to leave no 'community of interest remaining,'" and in the "City of Para" case, above quoted, the judge said: "But it is admitted that, in practice, close questions will arise as to the completeness of the separation, and whether, after the alleged separation, community of interest still remains."

It would seem, therefore, that there is no settled law on the subject, but that each case will open up its own disputes.

R. B. H.

## THE "INCHMAREE" CLAUSE

With further reference to this much discussed question, I take the liberty of quoting from the remarks of Mr. K. W. Elmslie, vice-chairman of the British Association of Average Adjusters made to that association at the last annual meeting. After reviewing the history of the clause and the various decisions in connection with it, he said:

"It was manifestly for business convenience that a risk under a policy should run off by the liability under the policy being ascertained as early as possible, and from a business point of view, and speaking generally it is difficult to see any perversion of the true principle of insurance law in giving the widest interpretation to the clause reading in conjunction with the words 'lost or not lost,' where there is good faith and no want of due diligence. If this is not so and if the expense of renewing a part condemned for latent defect is to be dated back to the original date of such defect under the doctrine of pre-existing latent defect, what is the position of the underwriters in the case of repairs under average? A shaft, or stern frame, free from latent defect, breaks by stranding, and the underwriters intervene and the damage is made good, but the new shaft or stern frame supplied is subsequently found (after the ordinary engineers' guarantee has expired) to have a latent defect and is condemned. It is then obvious that the stranding damage was in fact not made good, and the underwriters are liable for the further repair. Or, suppose a fresh accident fractures a stern frame supplied under average, and it is then found that the stern frame so supplied was never really efficient by reason of a latent defect, and that such latent defect, apart from the subsequent fracture, rendered it condemnable, what would be the position of the underwriters? Again, in a repair of damage, a method of welding broken machinery or propeller blades may, for the underwriter's benefit, be adopted and passed as efficient, but it may prove after some lapse of time that there was a latent defect in the weld and that in consequence the repair effected was not in fact a making good or repair of the damage. The liability of the underwriters under the policy on which the first accident happened would seem to be an almost indefinitely continuing one, and underwriters would certainly object to such a position. They like an 'arrival' so to speak.

"Now, the duty of average adjusters is plain. We have for twenty years given effect to what was understood to be the intention of the parties, but if the parties have failed to express their intention adequately, we must follow the legal interpretation of the clause as declared by our courts of law, and of course give due respect to the opinions expressed, even if only obiter dicta, but whilst our duty is plain our difficulties and doubts are great." R. B. H.

## ASSOCIATION OF MARINE UNDERWRITERS

The annual meeting of the Association of Marine Underwriters was held at San Francisco on January 26, 1912. The treasurer's report showed the association to be in a flourishing condition with a good membership roll and a satisfactory cash balance. A large number of the members attended and elected the following officers for 1912: President, Charles R. Page; vice-president, E. S. Livingston; secretary-treasurer, H. C. Casidy; executive committee, C. A. Hulme, C. E. Henderson, J. A. Bishop. The annual banquet was held at the Bellevue Hotel at 7 p. m. and was well attended.

J. A. Bishop spoke on the advantages of having a library for the association. This project was given hearty support by the members present and a good-sized subscription list was immediately started. Other short addresses were given from the steerage and quarter deck, and one of the most interesting "annuals" the association has had came to a close at 11:30 p. m.

## WRECKS—CASUALTIES AND MISCELLANEOUS REPORTS

"**VIRGINIAN**," Am. str., while proceeding from Seattle January 12 for Tacoma, was in collision with the Br. str. "Strathalbyn," from Tacoma with a cargo of lumber for Sydney, N. S. W. Both steamers were badly damaged, and the "Strathalbyn" put back to Tacoma, the "Virginian" continuing on her course. Cross libels have been filed, against the "Virginian" for \$160,000 and against the "Strathalbyn" for \$100,000. The Virginian is valued at about \$400,000 and the "Strathalbyn" at about \$200,000. The former vessel is being repaired at Seattle and the latter at Esquimalt, B. C.

"**C. A. THAYER**," schr., from Grays Harbor with a cargo of lumber for Los Angeles, was towed into San Francisco January 16, leaking and with pumps disabled.

"**HYADES**," str., from San Francisco for Seattle struck bottom off Pt. No-Point January 23rd. The steamer commenced to leak and on examination in dock was found to have suffered considerable damage to the bottom.

"**SANTA ANA**," str., from Seward, Alaska, for Seattle, went ashore on January 23 at Karta Bay, Prince of Wales Island, but was subsequently floated. Extent of damage not yet known.

"**CHAS. F. CROCKER**, bktn., from Astoria for Peru with lumber, when anchored inside the bar lost both anchors and was run ashore on Clatsop Spit January 30, to prevent her drifting into the breakers. She was subsequently floated apparently undamaged.

"**WASHINGTON**," str., from San Francisco for Eureka, was picked up on Feb. 1st with machinery disabled and towed to San Francisco.

"**J. J. LOGGIE**," str., from San Francisco for Eureka, struck the bar while passing in, damaging her rudder and starting a leak. Will have to dock for examination and repairs.

"**WHATCOM**," str., was ashore at Dungeness on January 23, but was subsequently floated and proceeded to Seattle with slight damage to the bottom.

## STEAMSHIP "CALIFORNIA" PURCHASED BY ALASKA STEAMSHIP COMPANY

The Alaska Steamship Company has purchased the steamship "California," which is now under construction at the yards of Harlan & Hollingsworth Corporation, Wilmington, Delaware, having been contracted for by Messrs. Olson & Mahoney of San Francisco.

The new steamer, which was launched January 8th, is christened "Cordova." She is a steel, double bottom, oil-burning vessel of 3,000 tons cargo capacity, is 252 feet in length, 41 feet beam and has a depth of 20 feet; equipped with the latest machinery and boilers and will be capable of maintaining a speed of 11½ knots an hour. The vessel has passenger accommodations for 57 first cabin and 150 steerage passengers, state rooms and dining rooms on upper deck and a smoking room off the boat deck.

She will be completed about March 15 and will be delivered to her new owners in Seattle about June 1.

The Alaska Steamship Company announces that the "Cordova" has been purchased on account of the heavy tonnage which will result from the building of many new canneries in Southeastern Alaska, and also from the increased output in ore to be brought from Alaska this summer to the Tacoma smelter.

The sale of this steamer, reported to be at a marked advance over the contract price, indicates the improvement in trade and the optimistic views for the near future. Olson & Mahoney have placed an order with the Harlan-Hollingsworth Corporation for a steamer similar to the one now building, work to be commenced immediately.



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### SEATTLE-TACOMA-VICTORIA-NEW WESTMINSTER NEW STEAMSHIP SERVICE

The Canadian Pacific Railway Company formerly ran a direct steamship service between New Westminster and Victoria, B. C., but this was eliminated in favor of Vancouver. The Board of Trade of New Westminster has been endeavoring for the past two years to open direct communication with Victoria, Tacoma and Seattle, thereby further extending its business relations with these cities without causing loss of time by trans-shipment. This service has now been inaugurated by the freight steamer "Alaskan," which will be operated on a weekly schedule, thus affording good opportunities for the merchants of these cities. The trip south will include calls at the principal points on the islands of the Gulf to Victoria, when a direct service with a northern call at the islands will be made, in all probability New Westminster will be reached on this trip every Wednesday night, leaving on Thursday for Victoria and Tacoma, from which point the "Alaskan" will arrive at Seattle on Saturday morning, with a twelve-hour stop-over.

The schedule is not definitely settled and some slight alterations may be found necessary for smooth-working, but the trade opportunities afforded by this service cannot be over-estimated for all cities served by the "Alaskan," as well as for the opening up of the Gulf islands to commerce and agricultural development.

United Wireless Telegraph Company, Pacific Coast Division  
San Francisco, Jan. 23, 1912.

"Editor Pacific Marine Review,  
"Seattle, Washington.

"Dear Sir:

"At Mr. Armstrong's request, I am writing to you calling your attention to certain errors in the article entitled 'Wireless Record for Estevan,' published on page 31 of your January issue.

"Since October, 1908, when I finished the work of constructing the Kahuka station on the Island of Oahu, the San Francisco station of the United has been nightly communicating with this Hawaiian station, in fact, the signals from our station here are so strong at Kahuka that it became necessary for us to reduce the power to enable Kahuka to 'clear' ships quite near. The United station at San Francisco regularly works with the Pacific Mail steamers between 3,000 and 4,000 miles. On the night of the 20th it 'cleared' the 'Persia,' 2,000 miles west of Honolulu, and in October worked direct with Japan and Washington, D. C., and with Key West and Colon. Many more instances can be quoted that can be verified by government records and which will put the Canadian completely in the shade. I personally have been 3,500 miles from Frisco and in direct communication with our 'PH' station at San Francisco. Yours very truly,

"ARTHUR O. ISBELL,  
"Assistant Manager Pacific Coast Division."

## COMMERCIAL MOVEMENTS ON PACIFIC COAST

TONNAGE MOVEMENT, PORT OF SAN FRANCISCO FOR MONTHS OF DECEMBER, 1911; JANUARY, 1912.

Compiled by Marine Department, Chamber of Commerce.

From—	Arrivals		Arrivals		Departures		Departures	
	December, 1911	Steam	Sail	January, 1912	December, 1911	Steam	Sail	January, 1912
Coast .....	350,849	37,197		342,895	25,897	375,557	41,093	349,430
British Columbia .....	14,026			13,984		25,835	2,659	35,200
Hawaiian Islands .....	16,707	1,316		24,673	614	24,783	1,043	27,562
Alaska .....		637		3,824	189			253
Europe .....	10,841	3,935		3,463		3,174		
China-Japan .....	44,032	1,578		34,295		42,292		35,662
South America .....	23,754			31,719	1,993	23,140		21,922
Philippine Islands .....				3,745		3,653		3,654
Australia .....	9,569	6,216		7,491	3,022	2,782		11,079
Mexico .....	33,515			26,698		13,199	398	9,310
U. K. of Cont. .....	597	1,981			1,779	6,720		4,252
Eastern Ports .....	7,118			6,000				
Pacific Islands .....	1,939			1,939		1,939	73	
Africa .....								
Various .....								

### "INDIANOLA" PURCHASED BY J. H. WELSFORD & CO.

Messrs. J. H. Welsford & Co., Ltd., have recently purchased a large single, shelter-deck steamer built on the "Isherwood" system by Richardson-Duck & Co., Ltd. Her dimensions are 404 feet by 52 feet 6 inches by 35 feet 8 inches deep, with a carrying capacity of 8,300 tons on a draft of 24 feet 10 inches. She has three single-ended boilers, and is engined by Blair & Co. The diameter of the cylinders are 26, 42, 70 feet, by 48 foot stroke. The vessel is built to a very full specification, with excellent auxiliary machinery, and is named the "Indianola."

The "Indianola" recently left the Tees to take up her position in the Gulf Transport Line, with which Messrs. J. H. Welsford & Co. provide a regular service between Galveston, Tex., and Liverpool, and Galveston and Bremen. She will be available to run in the Canadian-Mexican Line if the trade between British Columbia and Mexico so develops as to justify a further extension of this service.

The steamers at present operated by J. H. Welsford & Co. are the "Indore," 10,000 tons; "Inkula," 8,800 tons; "Ikbal," 8,600 tons; "Indianola," 8,300 tons; "Inkum," 8,300 tons; "Ikaria," 7,200 tons; "Ikala," 7,100 tons; "Ikalis," 7,100 tons, and "Industry," 6,600 tons.

### SEATTLE HARBOR MASTER'S REPORT. JANUARY, 1912.

#### Deep Sea Vessels.

Arrivals—	No.	Net Tonnage
Steam .....	128	263,964
Sail .....	8	19,634
	136	283,598
Departed—	No.	Net Tonnage
Steam .....	129	269,651
Sail .....	8	18,451
	137	288,102

#### Passengers

From and To—	Inbound	Outbound
Foreign and British Columbia .....	6,520	5,939
Coastwise and Alaska .....	1,845	3,035
Local Points .....	97,424	97,490
	105,689	106,464

#### Imports

From Coastwise Points—		
Cement .....	1,108 Ton	8,300
Mdse. ....	61,415 Ton	1,464,292
From Alaska Points—		
Mdse. ....	2,560 Ton	165,364
From Local Points—		
Logs .....	5,840,980 Feet	52,941

Mdse. ....	6,588 Ton	432,145	485,086
From the Philippines—			
Hemp .....	8,733 Bales	131,933	
Mdse. ....	25 Ton	3,529	135,462
From Hawaiian Islands—			
Mdse. ....	400 Ton	2,650	
Pineapples .....	1,263 Cs	4,186	6,836
From Pacific Ocean—			
Halibut .....	492,000 Lbs.	36,611	36,611

Total Value Domestic Imports .....	\$2,301,951
From British Columbia .....	\$ 165,538
From Australia .....	6,666
From Germany .....	55,323
From France .....	8,894
From Scotland .....	4,571
From Ireland .....	421
From England .....	21,287
From South America .....	10,729
From Norway .....	5,792
From Denmark .....	233
From Sweden .....	127
From the Orient .....	1,702,427

Total Value Foreign Imports .....\$1,982,008

#### Exports

To Coastwise Points .....	\$ 498,317
To the Philippines .....	94,681
To Hawaiian Islands .....	56,541
To Local Points .....	660,423
To New York .....	84,969
To Alaska .....	526,365

Total Value Domestic Exports .....	\$1,921,296
To British Columbia .....	\$ 819,23
To the Orient .....	1,231,417
To England .....	107,134
To Scotland .....	13,566
To Germany .....	2,382
To South America .....	53,937
To Australia .....	40,761
To Mexico .....	10,967

Total Value Foreign Exports .....\$2,277,658

#### COMMERCIAL MOVEMENTS AT PORTLAND, ORE.

(Compiled by Merchants' Exchange.)

##### Lumber Exports From Portland (Foreign.)

Feet.	Value.	Feet.	Value.
11,007,073	\$106,294	150,000	\$ 1,500

(Domestic.)

9,755,000	\$ 97,550	5,335,000	\$ 61,352
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##### Wheat Exports From Portland (Foreign.)

Bushels.	Value.	Bushels.	Value.
857,086	\$727,673	1,286,974	\$1,107,896

(Domestic.)

159,833	\$135,858	468,682	\$ 386,663
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##### Flour Exports From Portland (Foreign.)

Barrels.	Value.	Barrels.	Value.
56,521	\$223,559	52,612	\$210,446

(Domestic.)

33,684	\$116,212	26,170	\$129,541
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##### Tonnage Entered at Portland

January, 1912—71 vessels .....	108,552 tons
January, 1911—68 vessels .....	89,097 tons

##### Tonnage Cleared From Portland

January, 1912—68 vessels .....	107,794 tons
January, 1911—65 vessels .....	87,552 tons

##### Principal Foreign Imports at Portland

	Jan'y, 1912.	Jan'y, 1911.
Camphor, tubs .....		45
Curios and merchandise, pkgs .....	1,313	1,914
Firecrackers, cases .....		30
Liquors, cases .....	745	494
Liquors, casks .....		30
Matting, rolls .....	253	193
Provisions, pkgs. ....	3,547	5,213
Rice, sacks .....	450	662
Sugar, sacks .....	100	175
Sulphur, tons .....	595	345
Tea, pkgs .....	239	213

##### Principal Domestic Imports at Portland by Water

	Jan'y, 1912.	Jan'y, 1911.
Asphaltum, barrels .....	866	1,611

## CHICAGO

VIA

### Northern Pacific Railway

And Minneapolis and St. Paul

TWO DAILY THROUGH TRAINS

NORTH  
COAST  
LIMITED



ATLANTIC  
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Express when  
westbound)

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The Line to Gardiner, the Official Entrance to  
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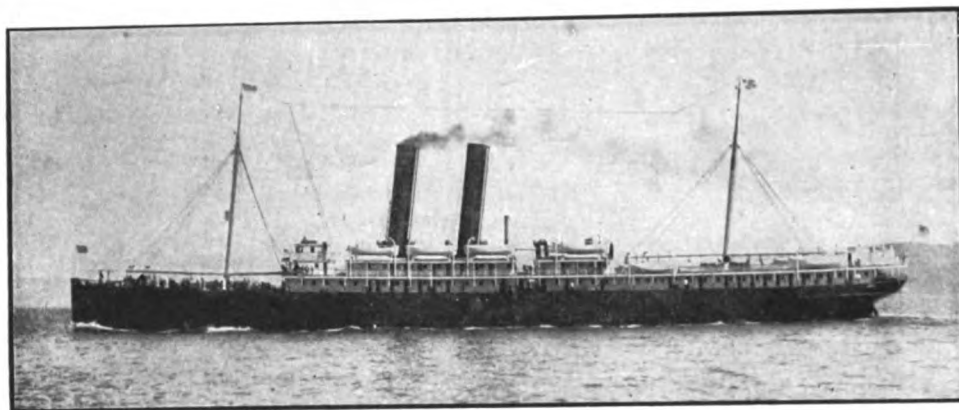


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Cement, sacks .....	36,732	137,412
Coal, tons .....	538	445
Coffee, sacks .....		914
Electrical goods, pkgs .....	693	386
Hardware, tons .....	1,853	1,576
Iron, pkgs. ....	11,212	9,545
Liquors, cases .....	321	1,001
Machinery, pkgs. ....	396	742
Merchandise, tons .....	2,478	2,925
Miscellaneous, pkgs. ....	25,241	36,272
Oil, barrels .....	177,744	310,500
Paints and oils, pkgs .....	4,903	7,419
Plaster, sacks .....	6,316	12,325
Salt, sacks .....	22,549	15,420
Sash and doors, pkgs .....		3,356
Sugar, sacks .....	20,900	30,289
Sulphur, sacks .....	5,733	728
Tobacco, pkgs. ....	1,609	1,158



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S. S. "OREGONIAN"—8,000 tons.  
S. S. "TEXAN"—12,000 tons, twin screw.  
S. S. "GEORGIAN"—8,000 tons.  
S. S. "KENTUCKIAN"—8,000 tons.

#### PACIFIC FLEET

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S. S. "MISSOURIAN"—12,000 tons, twin screw.  
S. S. "VIRGINIAN"—12,000 tons, twin screw.  
S. S. "ISTHMIAN"—6,000 tons.  
S. S. "NEBRASKAN"—6,000 tons, twin screw.  
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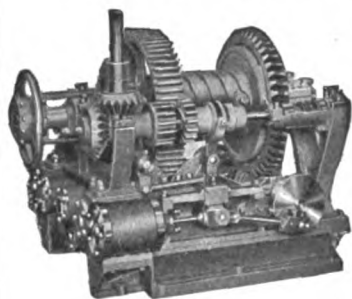
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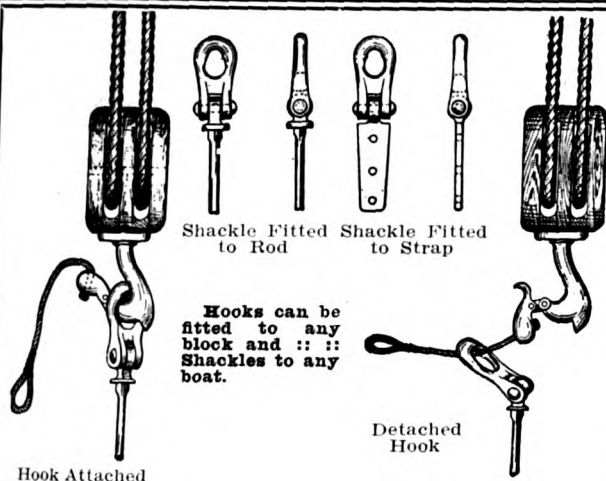
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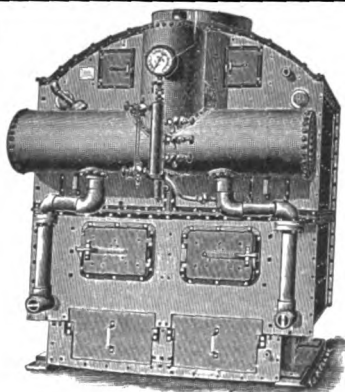
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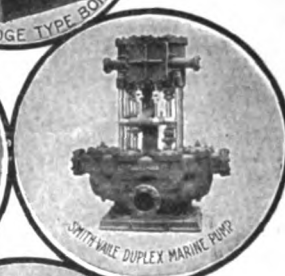
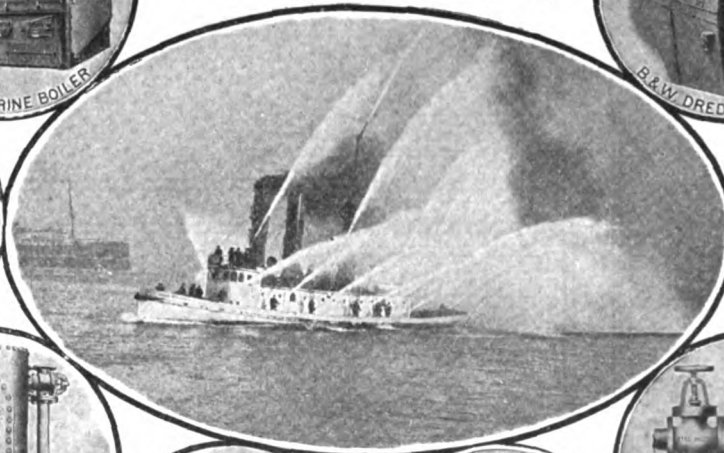
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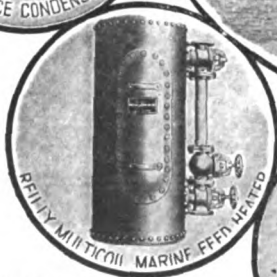
B&W DREDGE TYPE BOILER



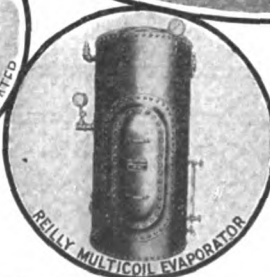
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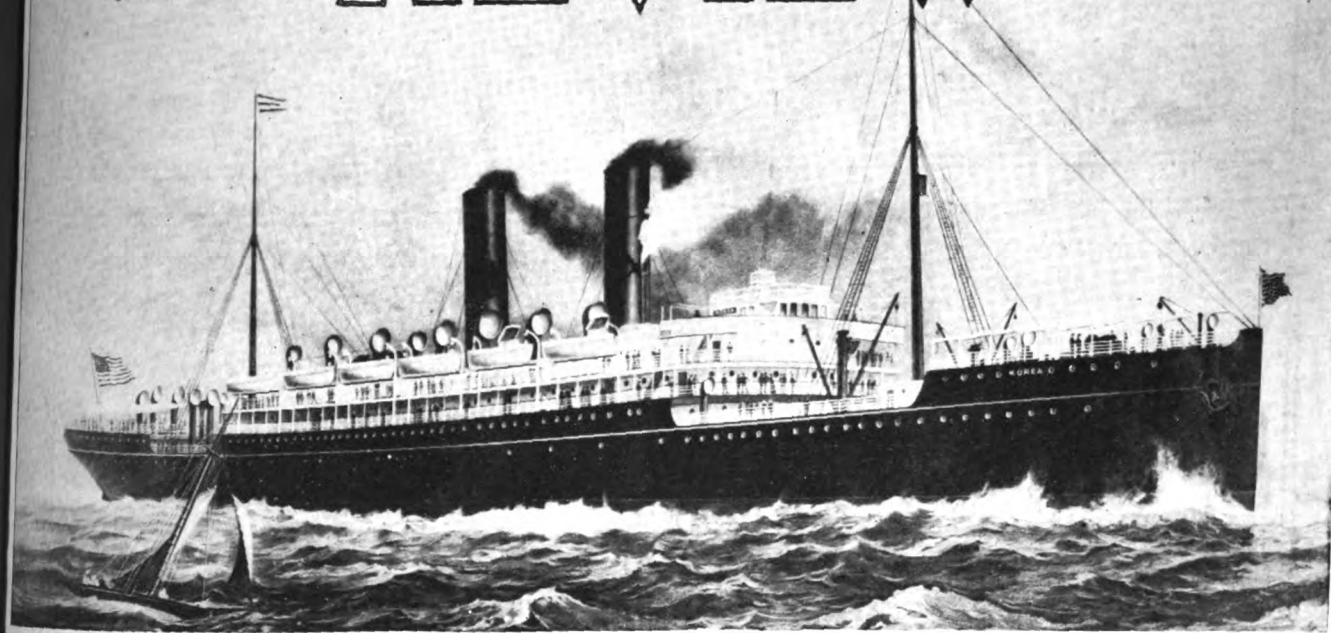
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APR 22 1912



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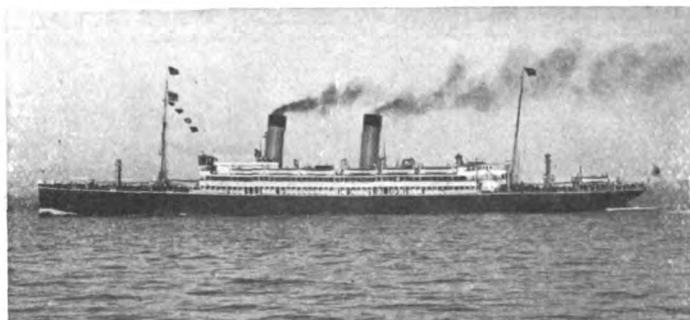
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# PACIFIC MARINE REVIEW

VOL. IX

SEATTLE, WASH., U. S. A., MARCH, 1912.

NO. 3

## PANAMA CANAL TOLLS

By MR. LEWIS NIXON

**W**E ARE indebted to Mr. Lewis Nixon of New York for his patriotic letter addressed to the president and members of the Chamber of Commerce of the state of New York, dated February, 1912, which we take pleasure in reproducing in full herewith.—Ed. Note.

Gentlemen: The report of the Committee on Foreign Commerce and the Revenue Laws on Panama Canal tolls in the Monthly Bulletin of March, 1912, is so misleading in its general tenor that a short analysis is called for in the national interest.

I must leave the city for a few days, on the 6th of March, and so cannot be present at the meeting on the seventh; hence must use this means of calling attention to the statements contained therein.

The report of the commissioner of navigation has been garbled to bolster up, what appears to me, an unpatriotic conclusion and misleading statements made as to treaty obligations.

Your committee says:

"When the Panama Canal was first considered it was not anticipated the cost would be as great as the finished result will show."

Many prominent engineers pointed out the certainty of exceeding the first estimates. Once committed to this enterprise, it was known that the United States could not turn back. At any rate the fact that it will cost far in excess of the sum that our people thought they were to invest in such an enterprise is hardly a good argument in favor of our not forcing those chiefly benefited to pay at least a part of the unexpected expense.

There are extensive quotations from the Clayton-Bulwer treaty although this treaty, born in misrepresentation and continued in breach of faith, is no longer binding and is not even published in the 1904 "Compilation of Treaties in Force," issued by the Department of State.

In quoting Article I of this supplanted treaty you will note certain \* \* \* after the words "agreeing that neither will ever erect or maintain any fortifications commanding the same or in the vicinity thereof."

What is omitted by the committee is as follows:

"or occupy, fortify or colonize or assume or exercise any dominion over Nicaragua, Costa Rica or the Mosquito Coast or any part of Central America; nor will either make use of any protection which either affords or may afford, or any alliance which either has or may have, to or with any state or people, for the purpose of erecting or maintaining any such fortifications, or of occupying, fortifying or colonizing Nicaragua, Costa Rica or the Mosquito Coast, or any part of Central America, or of assuming or exercising dominion over the same."

I cannot believe that the members of your committee are so unacquainted with American history as not to know that the conversion of English lumber camps on the eastern coasts of Honduras and Nicaragua into what was practically British territory, through virtue of occupation in anticipation of the building of the Nicaraguan Canal, was considered by American statesmen of that period as a virtual abandonment by us of the Monroe Doctrine, as it was and is to the present day.

So, acting in good faith and believing Great Britain would keep her promise, as supplied above, though omitted

by your committee, the treaty was ratified and proclaimed. In 1848 England under the mask of Mosquito Indians seized and occupied Greytown. After the treaty was once signed England continued in possession even supporting the farce of a Mosquito Indian king. Just so long as it seemed possible that the Nicaragua Canal would be built England continued in possession, getting the Austrian emperor to bolster up her claims by endorsing Great Britain's guardianship of the coast; Great Britain then converting the lumber settlement of Belize into a crown colony. In 1891 and 1892, when work was being vigorously carried on upon the Nicaraguan Canal under Menocal, we find an English syndicate busily engaged in railroad building and English influence reflecting upon the good faith of the United States in the capital of Nicaragua saying that our country would not keep its promises, and holding out the hope to Nicaragua that the republic would be given the sovereignty of the coast. Local discontent was freely used as an excuse for interference and to betray treaty promises. In 1894 after work was abandoned in Nicaragua that part of the Mosquito Coast lying abreast of Nicaragua was converted into the Department of Telaya of the Republic. But England still occupied Belize. It will be noted that no mention is made in the Clayton-Bulwer treaty, of fortifications in the West Indies. We had no territory there, but England did.

It was upon the flimsy foundation of this dead treaty that many Americans based their contention that we had no right to fortify the Panama Canal. This Clayton-Bulwer treaty, while not in any sense binding now, contemplated a canal through territory alien to both the contracting parties although as we see England in spite of promises written into the treaty, kept her grip on contiguous territory.

But the Panama Canal is through our territory—under our own flag and is paid for by us as a nation.

Now as to another altogether misleading and inexcusable statement. The committee says:

"This treaty (Clayton-Bulwer) was further extended in 1901 between those respective governments."

Your committee should know that this is misleading. The Clayton-Bulwer treaty was replaced by the Hay-Pauncefote treaty and is no longer to be taken into account. The only common idea is that of neutrality.

The statement of the committee is evidently meant to give the impression that the treaty of 1901 supplemented the treaty of 1850.

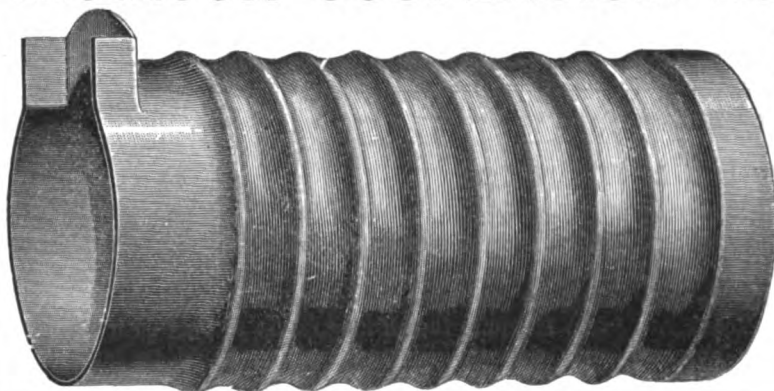
That there shall be no doubt as to the facts, I quote Article I of the Hay-Pauncefote treaty which says:

"The high contracting parties agree that the present treaty shall supersede the aforementioned convention of the 19th April, 1850."

So long as the Hay-Pauncefote treaty exists we acknowledge two masters for the canal zone and under any and all definitions in international law the delegation to the United States, in Article III (Panama treaty, 1903, of the sovereignty of such canal is meaningless, as a divided sovereignty over territory under our flag should be impossible under the circumstances.

And yet we are told by the committee that the Hay-Bunau-Varilla of 1903 reaffirms the treaty of 1850, though

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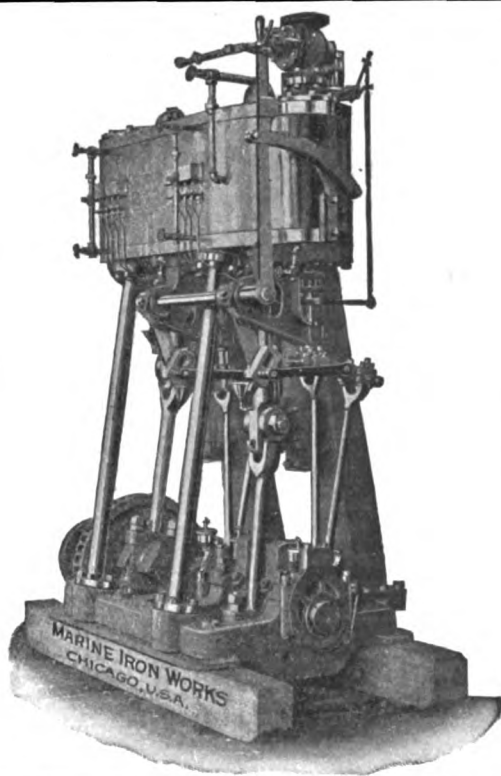
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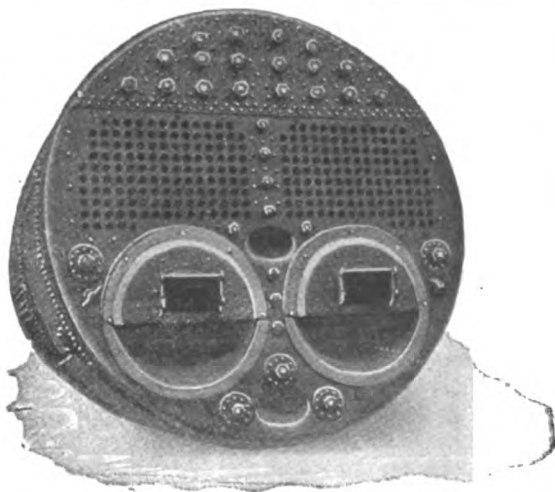
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this treaty confirms our right to use land and naval forces and fortifications to protect the canal.

So the conclusion is drawn by the committee as follows:

"It would, therefore, appear that unless these treaties (1850, 1901, and 1903) can be abrogated by consent of both parties, the United States could not honorably discriminate in its favor as against Great Britain."

Yet this report is to be taken as a basis for a vote by this chamber upon the operation of one of the most important works ever undertaken by our government.

Ignoring the fact the president of the United States finds nothing in the Hay-Pauncefote treaty to forbid favoring our own vessels; ignoring the fact that the superseded treaty of 1850 to which the committee harkens back for a frail foothold of argument was violated by Great Britain, we find the committee even ignoring the facts of the Hay-Pauncefote treaty. Let us quote direct from this treaty and drag no ill odored bag across the scent.

Section 1 of Article III, says:

"The canal shall be free and open to the vessels of commerce and of war to all nations observing these rules, on terms of entire equality, so that there shall be no discrimination against any such nation, or its citizens and subjects, in respect of the conditions or charges of traffic, or otherwise. Such conditions and charges of traffic shall be just and equitable."

Section 5 of Article III, says:

"The provisions of this Article shall apply to waters adjacent to the canal, within three marine miles of either end. Vessels of war of a belligerent shall not remain in such waters longer than twenty-four hours at any one time, except in case of distress, and in such case, shall depart as soon as possible; but a vessel of war of one belligerent shall not depart within twenty-four hours from the departure of a vessel of war of the other belligerent."

No one could possibly construe such plain statements as in any way but that we are to open the canal

"to the vessels of commerce and of war to all (other) nations on terms of entire equality."

All I think will admit that the constitutional authority for building the canal exists in the war power of the United States. Two presidents have confirmed this view in their statements that this canal is an addition to our war power as it admits of quick transfer of our naval forces from one ocean to the other.

Yet the committee says that under Section 1 of Article III of the Hay-Pauncefote treaty that we cannot discriminate in favor of our own commercial vessels in the matter of tolls, or otherwise, and therefore we cannot do so in regard to our own war vessels so that if during war with a foreign power we find an enemy's ship in the canal we cannot chase it out and if it leaves such waters we must wait twenty-four hours before giving chase. Being given under Article II "the exclusive right of providing for the regulation and management of the canal," if engaged in war, our warships finding themselves in the canal, must chase themselves out.

Such interpretation is a reflection upon the general intelligence of the community and we can well understand how the statesmen of other nations hold their tongues in their cheeks at our gullibility and our desire to begin charity abroad. And yet such ridiculous interpretation is a logical sequence to the committee's unqualified reading of Section 1, Article III.

The report of the committee thus far is an unanswerable argument in favor of immediate abrogation of the Hay-Pauncefote treaty on the score of infringement of our sovereign rights, violation of the Monroe Doctrine and incompatibility with the constitutional operations of the canal. We wanted to get rid of the Clayton-Bulwer treaty as its existence was a reflection on our national self re-

spect but why it was necessary to ask a European nation's permission to build and control a canal through our own territory, under our own flag, and with our own money, I am at a loss to understand. Treaties are the supreme laws of the land but no more so than our constitution which we may amend and our laws which we may repeal. At any rate the treaty for our present purposes means only that we shall treat the vessels of all other countries under our rules on terms of equality though even this interpretation limits disadvantageously our sovereignty, as I think there should be preferred treatment for the vessels of all the western republics, even Canada, as against European or Asiatic vessels.

However, we shall now follow other arguments or rather examine their premises.

The committee states:

"The Suez Canal since its opening has charged the same rate of tolls to all nations, though its stock is practically owned by Great Britain and France."

With delightful ingenuousness we are to be led to the conclusion that a canal through territory foreign to both France and England operated by a company in which they both own stock is the same as a canal built, owned and operated by a government in its own territory and that only the altruism of England and France presents their operating it in their own interest. The Suez Canal has paid for itself several times and now pays about 30 per cent per annum, but we hear no movement on the part of the chief user to make it free to all vessels.

The committee says that "It is asserted and generally credited that some governments make returns to their shipping passing through the Suez Canal in the nature of subsidies that in whole, or in part, offset the canal tolls."

I can see no use for the phrase "general credited" except to give the impression that such belief is unwarranted.

Following this that we may get a fuller light upon what the committee would have us believe—we find the committee saying:

"As many of the steamships availing of these subsidies do not pass through the Suez Canal, it can hardly be asserted with fairness that the subsidies are given for canal purposes. Your committee does not feel that it is called upon in this report to discuss the question of subsidies, but to adhere strictly to the question of tolls."

But the committee implies a doubt, draws a conclusion and then abandons the line of thought.

Why not discuss the question if such discussion be enlightening? Other nations do directly rebate Suez Canal tolls and the committee must know it and know too that the subsidies which it tries to make general are in most cases directly voted to equalize such tolls. So why run away from the issue, or must we only provide a free feast of commerce to which all the world is bidden to partake at our expense?

The Russian government in 1909 appropriated 650,000 roubles in exact terms to pay the tolls of the merchant steamers of the Russian volunteer fleet both for tonnage and for all men, women and children carried.

The British P. & O. company receives in subsidies enough to nearly pay all its canal dues although it operates through the canal a number of boats apart from mail steamers.

The North German Lloyd receives an annual subsidy on its vessels using the canal of \$1,385,000. Japan pays a subsidy of \$1,336,947 to the Nippon Yusen Kaisha for its steamers through the Suez to Europe.

The Messageries Maritimes, the largest French company using the Suez Canal was paid for its lines to China, Japan, Australia and Madagascar, \$2,145,000 in subsidies.

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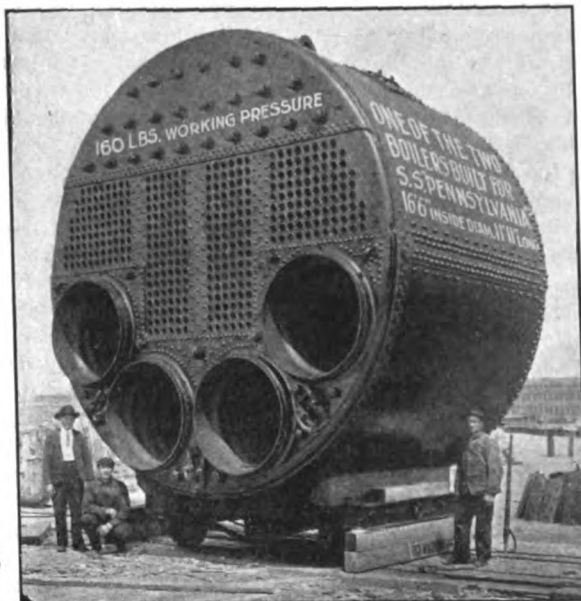
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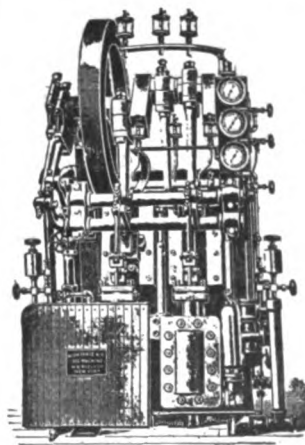
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tolls on Austrian steamers from Trieste to Bombay, Calcutta and Kobe.

The Swedish government calculates its subvention to the Svenska Ostasiatiska Kompaniet to represent the amount of tolls paid by the ships of the company for passing the Suez Canal. I think the above not only pertinent but enlightening.

Let us again quote from the committee's report:

"Although the commissioner of navigation in his report just issued favors the payment by the United States government of tolls upon American vessels, he makes the following statement: 'It is not questioned that the traffic of the Panama Canal should supply revenue for its maintenance and possibly in time for the partial amortization of the expense incurred in construction. Toward this revenue we must ourselves contribute in some way, for even if our treaty obligations will permit us to impose upon foreign nations the entire burden of paying for the canal, not for an instant would there be a disposition to adopt so ungracious a policy or in fact; could it be commercially feasible.'"

Of course this is all qualified but it's a very fine distinction in commercial ethics which forbids charging a fair price for services rendered, when there is no compulsion as to usage and vessels will only pass through the canal when it is to their advantage to do so.

However since the committee seems to draw comfort and inspiration from the utterances of the commissioner of navigation, I will quote him further: "A deliberate conclusion to tax directly American shipping to pay for the maintenance of that canal when no tolls are imposed on vessels, American or foreign, for the use of our other improved highways will be well nigh inexplicable save as the definite surrender of the oceans to others by the United States except as we may use its waters from time to time for the maneuvers of our war fleet."

This has an American ring about it.

Further quotations will prove that the commissioner of navigation has not "the opinion that tolls should be charged and to all alike," as the committee rather too hastily concludes.

The committee again quotes from the commissioner though with what object it's hard to judge:

"A long line of treaties binds us to equal tolls on American and foreign vessels entering the improved harbors of New York, New Orleans, San Francisco, and every other harbor, river, lake and canal within the United States."

Of course they do—I do not deny that we give much for nothing and that we have been worsted in practically every one of our commercial conventions.

But such river and harbor improvements are for our own commerce while the canal may be used by vessels that never reach one of our ports and in direct competition with us.

A policy deliberately adopted which aids other vessels in our trade undoing is monstrous and unpatriotic. Does the committee wish the chamber to think that there is no difference in their respective effects upon the national economy between the Panama Canal and Ambrose Channel?

While swallowing the camel of \$24,550,000 tolls on the Suez Canal for 1910 the committee strains at the idea of \$14,500,000 for the Panama Canal.

As the best and fullest use of the canal for several years will be by foreign vessels, why not let those vessels, which from our inadequate equipment will reap the greatest profit and develop their own countries' trade, pay charges in proportion to advantage obtained? The Suez Canal started with tolls of 10 francs per gross ton, with a surtax, but they are now about \$1.30 per net ton. There is every

reason why we should start with an adequate toll which can be lowered as the volume of travel increases.

It will be found necessary in all probability to write off the cost of the canal and to be content for at least a number of years to pay operating charges of all kinds and by a surtax to raise a sum for insurance against accidents such as earthquakes or other troubles, renewals and wear and tear.

On such a basis one dollar per gross ton would be sufficient. The net ton is not a true measure of the bulk or volume of the vessels and hence the gross ton should be employed as being the more equitable standard by which to gauge charges. The committee knows the difference between gross and net tonnage, but ignores it. The surtax might be levied on passengers or goods which do not come from or go to United States ports.

As regards the coasting trade there is a vast difference between domestic and foreign transportation. It is claimed that the coasting rates will serve to regulate railroad rates. We have from the beginning preferred our coasting vessels by constitutional regulation of trade and our coasting trade is prosperous and with naval orders keeps alive the shipbuilding industry.

There is no question in any one's mind as to our right to prefer our coasting vessels, such preference being within the constitutional power to regulate commerce.

The committee is here to be criticised more than at any other part of its report for while not passing upon preference for the coasting trade, it shuts out such preference in its resolution by recommending a toll of one dollar per ton on all tonnage passing through the canal.

Let us see how the committee disposes of this most important problem:

"The question of American shipping doing a coastwise tonnage passing through the canal free of tolls is a most difficult one to solve. There is a great diversity of opinion and until this matter has been definitely determined by our government in relation to the existing treaties with Great Britain and other countries your committee does not feel qualified to pass upon it."

But does the committee give their country the benefit of the doubt and qualify their recommendation? Not at all. They ask the chamber to pass the following resolution:

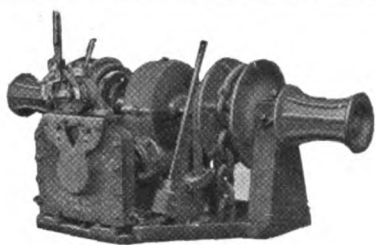
"Resolved: That the Chamber of Commerce of the state of New York favors a rate of \$1.00 per ton on all tonnage passing through the canal, and urges upon congress to take early action upon this important matter."

Not a single exception. The committee interprets the treaties and settles the coasting trade preference at one blow. How the chancellories and the shipping rings of our European rivals will rejoice at the sounding of such attack upon American shipping by New York's great Chamber of Commerce.

I am not building vessels any more and cannot be charged with a selfish interest in this great question, but I am at a loss to understand why I find myself so often combating un-American policies. We see our dependence upon the oceans progressively increase and while we rail at monopoly on land we look with complacency upon the growth of an all powerful monopoly upon the seas in the ships of our commercial and political rivals and in the arts and accessories of navigation.

This chamber should go much further in its recommendations.

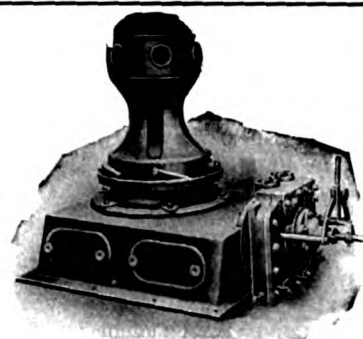
The Spooner act provided for building the canal but not for its operation. The splendid work done by Geothals and Gorgas and the great men on the Geothal staff such as Hodges, Devol and Sibert should not be lost in usefulness to the nation. A plan of control including the physical, such as upkeep and operation; sanitary; fiscal and civil,



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such as schools, courts and police must be studied. This chamber should have views upon such questions which would be of use; at any rate it can urge upon congress the importance of an early determination.

But in the adjustment of tolls we shall see the greatest measure of good or ill for the American merchant marine. If you are not willing to aid in the building up of our merchant fleet through differential tolls that is a question of conscience alone. But do not quiet that conscience by believing that any treaty stands in the way of preferring our own.

I oppose the resolutions offered because the premises upon which they are based are misleading and incompetent and the resolutions themselves carelessly drawn and harmful.

I beg to submit the following substitute resolutions:

The Chamber of Commerce of the state of New York having considered the problem of tolls upon the Panama Canal recommends as follows:

1. That for the next ten years the interest on the canal bonds shall not be charged against the tolls.

2. Foreign vessels in the foreign trade to pay a toll of one dollar per gross ton register, if of foreign build; foreign vessels built in the United States to pay 30 cents per ton; United States vessels in the foreign trade to pay twenty cents per ton; United States vessels in the coasting trade to pay 10 cents per ton; no charge to be made for U. S. men-of-war; men-of-war of other nations to be charged as merchant vessels; vessels in ballast to pay half rates.

3. Any surplus over operating expenses from the sum above collected shall be placed in a special fund to be ex-

pended for canal purposes or amortization of bonds as decided by congress.

This sum shall be further added to by a surtax on all vessels not carrying cargoes to or from United States ports of 10 cents per gross ton, regardless of flag; and on all passengers, not coming from or going to American ports on the vessel which brings them to the canal, there shall be a charge of two dollars each.

4. That this chamber urge upon congress the need of immediate legislation, fixing the control of the canal zone and the operation of the canal.

I need not point out to the chamber the delicate ground upon which it stands in accepting a report of a committee as a basis for action, which report attempts to construe a treaty in such a way as to hamper our country in disputes which may arise under this treaty in the future.

I have not hesitated to put facts strongly before the chamber, as I have considered it my duty to do as an American citizen, glorying in my selfishness in my country's interests.

I am always ready to discuss such questions and am sending a copy of this letter to each member of the committee.

I trust that it will be found that in the rush of other duties they have not fully weighed the questions upon which they report, and that they may go more fully into the subject before committing themselves to a policy the only arguments for which are un-American arguments.

Very respectfully,

(Signed) LEWIS NIXON.

This is equitable, patriotic and just.—Ed. Note.

## BRITISH VIEWS OF PANAMA CANAL POSSIBILITIES

While the opening of the canal will give a great impetus to trade with the west coast of South America, it is expected to do equally great things for the Western States of America and British Columbia. At present, it is said, the cost of the land journey right across the continent is relatively prohibitive. Given cheap through steamship communication by way of Panama from Europe to the Pacific ports, we shall, it is averred, see a big emigration traffic spring up which will bring greatly increased prosperity to the Pacific slope. Then, again, it is evident that not a little of the freight traffic which now goes eastward to the sea will find its natural port of shipment on the Pacific. Altogether the Panama waterway foreshadows so many possible changes that steamship managers may well be excused if they are anxious as to the new plans it will necessitate.

From the Tyne comes the interesting news that not a few of the steamers now building on the northeast coast are designed for the navigation of the Panama Canal. The orders for these vessels, says the correspondent who sends the information, have been placed very quietly, and in many cases it is not yet known for which particular branch of the Pacific trade they are intended. The fact that the vessels are designed to carry as much tonnage as possible on a restricted draft of water is held to leave no doubt as to the intention of the owners. This presumably does not mean that they must not draw much water if they wish to get through the canal. The new waterway will have an advantage over the Suez Canal in this respect, for it has been specially designed to secure the passage of modern ships of deep draft. The inference is that the trade in which these vessels will be engaged will not be associated with deep-water harbors, and that that fact has to be taken into account.

If report is correct we shall this year see a good many more vessels ordered, in view of the completion of the Panama enterprise. It may also be assumed that Conti-

mental countries are maturing their plans for the opening of new services with new ships. In the United States it is being sought to achieve the same end by a bill now before Congress which would have curious consequences. It would allow Americans to buy foreign-built ships and register them in their own country, provided such ships are not used for coastwise trade—which in the largest sense means trade between New York and San Francisco—and are strictly confined to foreign-going trade. It is of course in its foreign shipping that the United States is essentially weak. If the bill passes we shall see for the first time on record a mercantile marine split into two separate and permanent divisions. An incidental feature of the measure is that all shipbuilding material shall be admitted free of duty into the United States.

The city of Seattle and King County voted on March 5th, 1912, for a bond issue of harbor improvements and developments, aggregating approximately \$9,900,000, consisting of the Duwamish waterway and docks, valued \$1,950,000; for docks on Seattle waterfront to the value of \$2,950,000, and for the Harbor Island Terminals, \$5,000,000, totaling, as above stated, \$9,900,000.

We are informed that the port commission will at once proceed with Smith Cove developments. The other features of the large port program have as yet not assumed sufficient tangible form to afford basis for public statements which we, however, trust will be ready before Pacific Marine Review's April issue goes to press.

The China Homeward Conference has announced that from April 1 an increase of 10 per cent will be made on all rates of freight, as also 1s. (24½ cents) per ton additional will be charged on all shipments to London. A few days after this announcement the New York via Suez Conference followed suit with a similar notice to shippers with the exception that tea will be raised 40s (\$9.73) per ton.

## TOLL DISCUSSION OF PANAMA CANAL

By JOHN BARRETT.

**T**HAT Mr. John Barrett's personal, unofficial statement in regard to Panama Canal tolls was timely is proved by the fact that the press at large in this country has commented upon it editorially. There is a prevailing opinion that vessels engaged solely in the commerce between the Atlantic and Pacific coasts of the United States should be allowed to pass the canal free or at a small charge, but there is an extreme variance of opinion as to what should be the tolls on foreign vessels or vessels of the United States engaged in foreign trade. The committee on interstate and foreign commerce of the House of Representatives of the United States is hard at work holding hearings on the question of tolls and we trust will recommend legislation before this session of Congress is completed.

In view of the constant requests for matter connected with the question of tolls and trade of the Panama Canal and for copies of the address delivered by Mr. John Barrett at the annual banquet of the Lake Carriers' Association, at Detroit, Mich., January 18, 1912, extracts from that address are quoted below.—Ed. Note.

"The greatest opportunity today of the United States in foreign trade is to be found in our twenty sister republics lying to the south of us. It is of cardinal and vital importance that our great shipping as well as export and import interests should realize this. We must be up and doing to meet the competition of Europe and even of Asia. We must prepare now to take advantage of the canal when it is done so that it will prove a boon instead of a burden to our country.

"It will be almost a crime upon the judgment of our business interests if the nation is allowed to spend \$400,000,000 to complete the canal and then find that the shipping and commercial interests of our country are not ready to take advantage of it.

"Here I must sound a plain warning. I cannot mince words because of the actual facts which I know. I have to tell you that every important country of Europe which has a merchant marine, and Japan, is making most active and comprehensive preparations to take advantage of the canal. This is as it should be. Those countries and their shipping and business interests deserve credit for it. It would be unfortunate for the commerce of the world if they did not do it. The trouble is that the shipping and business interests of the United States are not making corresponding preparations. I do not say that they do not want to make preparations or have not the energy or ability to do so, but I do mean that in comparison with what the foreign world is attempting we are lagging behind at a dangerously long distance.

"Congress will probably settle the question of tolls for the canal at this session. If it fails to do so, the effect may be most unfortunate upon the preparations of shipping and business interests for the use of the canal. The relationship of tolls to the cost of operating shipping, to the charges that must be made upon cargo, and to the general organization and development of traffic through the canal is so close that a failure on the part of Congress to fix at least the maximum and minimum of canal tolls may mean a loss of hundreds of millions of dollars in the commerce of the United States after the canal is opened.

"The whole success or failure of the Panama Canal may be determined by the tolls. The great point is to make them sufficiently low. If they are above a certain figure, the canal will prove an overwhelming disappointment and the tonnage that will use it will be inconsiderable compared to our expectations. If they are fixed at a reason-

able or low rate, the canal will prove the greatest advantage to the foreign and domestic commerce of the United States of any influence in the history of the country. Careful estimates of expert statisticians are that at least 12,000,000 net tons of shipping will use the canal in the first year, provided the tolls are not too high. Placing even the low valuation of \$50 a ton on the freight carried, this means that \$600,000,000 of trade will go through that waterway, of which by far the largest share should be the commerce of the United States between the ports of the Atlantic and Pacific coasts or between the ports of both and foreign countries. Place the tolls too high and this tonnage can be easily reduced to 8,000,000 tons, or a reduction of \$200,000,000 of value of business done.

"Let us consider this question of tonnage in another way. Supposing a vessel measures 4,000 net tons and the tolls are only \$1.25 per ton, the maximum figure now suggested. This means that a vessel of that tonnage must pay \$5,000 for one way or \$10,000 for both ways through the canal. If the ship makes six trips in a year, this means \$60,000 paid out in tolls, or the interest of \$1,000,000 at 6 per cent. Such tolls may indeed be such a severe tax on shipping and on trade that vessels will in preference go around through the Strait of Magellan, continue to use the Suez Canal or will not get sufficient advantage from the present conditions of the Tehuantepec and Panama railroads to develop the enormous business which we expect through the canal. Personally I would favor a canal essentially free, because it must be admitted that if there were an open waterway between the Atlantic and Pacific at Panama, we would have the ideal condition and opportunity for the greatest development of water trade between the two oceans. As, however, the utilitarian policies of our government will not permit the acceptance of my suggestion of a free waterway, let us make the rates just as low as possible and still satisfy the demand that there shall be a tax on tonnage. In my opinion, as a student of the question of our trade opportunities through the canal, under no circumstances should the tolls on either foreign or American shipping exceed \$1 a ton. If they should be placed at \$0.50 a net ton, the whole world would be astonished at the amount of shipping that would use this waterway.

"We are not building the Panama Canal to produce a revenue. We are constructing it purely for commercial and military reasons. The military reason has nothing to do with the question of tolls, but the commercial has. We are not building the canal for a revenue from tolls any more than we are building postoffices and public buildings to get the revenue from them. The return of revenue to the United States from the canal should be through increased commerce and not through heavy charges on shipping and freight. The question of whether the United States shall tax a vessel a certain amount will have very little effect on the total revenues or expenditures of the United States government, but will have a most direct effect upon the commerce of the nation.

"To what does the Panama Canal open the commerce of the Central West, the Gulf and Atlantic coasts of the United States? From the Mexican-California line south to the Strait of Magellan is a wonderfully potential and extensive coast line of 8,000 miles, forming the Pacific side of Latin America. This coast includes twelve countries—Mexico, Guatemala, Salvador, Honduras, Nicaragua, Costa Rica and Panama, in North America, and Colombia, Ecuador, Peru, Bolivia and Chile in South America. The Panama Canal will give all of the lake section and the central

and eastern portion of the United States a direct approach, therefore, to 8,000 miles of coast line in the very infancy of its commercial and material development. I indulge in no exaggeration when I prophesy for that coast the same kind of development following the opening of the canal which the Pacific Coast states of the United States experienced following the construction of the trans-continental railways.

"Keep in mind some concrete and convincing figures. The Pacific coast of these twelve Latin American countries conducted last year, despite their isolation from the great routes of the world's commerce, a foreign trade with the rest of the world valued at nearly \$500,000,000. Without the canal they bought and sold that amount of business with other countries than themselves. This in turn represents an increase of nearly 100 per cent during the last fifteen years. If, therefore, they can under present conditions of isolation conduct a foreign trade of that magnitude, and with the increase it is entirely logical and rea-

sonable to estimate that when the canal is completed, and if reasonable tolls are charged for shipping, their commerce will grow within ten years to more than \$1,000,000,000 per annum. Of this there is no reason why the United States should not have the largest share. All these estimates are entirely apart from the great trade which the lake section, the Central West and the Gulf and Atlantic coasts of the United States will have through the canal with the Pacific coast of the United States, with Alaska, with Japan, China and the Philippines, with Australia and with Australasia. Even if the actual tonnage of freight carried from the Great Lakes and Detroit through the canal is comparatively small, the great amount of tonnage which will be carried from other sections and the benefit which will come to them, will give them, in turn, a prosperity which will make from them greater demands upon the possibilities of the shipping and the business of the Great Lakes the cities upon them and the tributary country."

## PACIFIC MARINE REVIEW'S SUGGESTIONS MAY RESULT IN CHANGE IN MARITIME LAWS

**W**E TAKE particular pride in publishing the sub-joined correspondence with the office of the Supervising Inspector General, Washington, D. C., the board of Supervising Inspectors of Steam Vessels, recently in session at the capital, by Pacific Marine Review, which is self-explanatory and may be of interest to our readers.—Ed. Note.

Department of Commerce and Labor, Steamboat Inspection Service, Washington. December 21, 1911.

Pacific Marine Review, Seattle, Wash.—

Gentlemen: Enclosed herewith you will please find copy of a circular letter sent out by this bureau to the representatives of the merchant marine generally, extending an invitation to meet with the Board of Supervising Inspectors at its next annual meeting in January, 1912, to discuss with it any propositions or suggestions regarding the practicability of the rules and regulations or the necessity of any changes.

If consistent with your practice, it is requested that the circular letter be printed in your paper, in order that as many persons as possible may be informed of the invitation therein extended. Respectfully,

(Signed) D. N. HOOVER, JR.,

Acting Supervising Inspector General.

Circular Letter

December 11, 1911.

United States Supervising, Local and Assistant Inspectors, Steamboat Inspection Service, Licensed Officers, Marine Boiler Manufacturers, Representatives of the Merchant Marine and Others Concerned—

Gentlemen: From various sources the attention of the department has been called to the fact that in some instances the application of the rules and regulations of the Steamboat Inspection Service has involved discussion and created some dissatisfaction, stress being also laid upon an alleged lack of uniformity in the administration of the affairs of the bureau. In this connection you are advised that the Steamboat Inspection Service is always willing to consider any suggestion that may improve conditions or make for better administration, and is always glad to take up, consider and discuss any proposed change in the rules and regulations that will insure their better and more uniform application, while maintaining the objects and purposes of the service.

The Board of Supervising Inspectors meets annually on the third Wednesday in January in the City of Washington, and as president of that board I extend to you a very cordial invitation to meet with the board at its next an-

nual meeting and to discuss with it any propositions or suggestions that you may have to offer regarding the practicability of the rules and regulations or the necessity for any changes.

It is requested that some time previous to the meeting you give an outline at least of any proposed changes or suggestions that you may have to offer, in order that the matter may be ready for discussion when you appear before the board. Respectfully, (Signed) GEO. UHLER,

Supervising Inspector General.

December 19, 1911.

The Hon. Geo. Uhler, Supervising Inspector General U. S.

Steamboat Inspection Service, Washington, D. C.—

Re meeting of the Board of Supervising Inspectors.

To the Chairman of the Board—

My Dear Mr. Uhler: In reply to D. N. Hoover's, Jr., acting supervising inspector general, letter dated December 12, with enclosure of circular letter dated December 11, signed by your good self, Pacific Marine Review takes particular pleasure in conforming with your request to give a short outline of suggestions in relation to the practicability of changes in rules and regulations desired for the improvement of conditions for better administration involving the steamboat inspection service.

In this respect we cannot possibly refer to a clearer discussion than the one published in our November issue under the heading of "Our Navigation Laws and Their Defects," of which we enclose a copy herewith.

In the December issue, we refer you to the other editorial under the heading of "The Drag a Relic of Our Ancient Navigation Laws." Both articles have been carefully compiled and written by the writer, bringing forth a multitude of favorable comments and letters from men of prominence in the transportation field, as well as from several representatives in the House and the Senate committees.

While the writer is fully aware of the fact that it is up to Congress to revise these ancient laws, so detrimental to the upbuilding and betterment of our Merchant Marine, we, nevertheless, feel that if the head of this important branch of the service, the Supervising Inspector General of the United States can coincide with our views expressed in these editorials, co-operating with us for the remodeling of this antiquated code, it is bound to bring forth the desired good results.

What refers to Draft and the Drag, of which sufficient has been said in these editorials, refers likewise to regulations of boiler construction in the United States, com-

pared with the construction of those under the British and German flag. We have no rules for material of rivets, we have no rules for riveting. The rules for material of shells, the shell plate formula and rules for flanging of plates, as well as material for stays and factor of safety do not compare with the rules of the Board of Trade, British Lloyds, Bureau of Veritas and the German Lloyds, on which subject the writer has undertaken to write an editorial for the January issue of Pacific Marine Review.

If we would comply with the rules of boiler constructions laid down by the above-mentioned Board and Associations, or change ours in accordance, it would certainly improve matters in general and be a great help to every ship under the American flag and a saving of continuous expense to such shipowners by eliminating the yearly hydrostatic test, which you well know, and know better than the writer, does not improve boiler conditions.

Since my retirement from a profession in which I have been actively and successfully engaged since 1875, until I met with the unfortunate disaster in the loss of the S. S. "Dakota," I have made it my duty to intrinsically study and compare our navigation laws with those of other nations and learn more every day, to my regret, of the antiquity and inadequacy and general lack of this important code compared with those of other more progressive and expansive trading nations of the world.

Before concluding in these suggestions, I wish to lay particular stress upon the utmost necessity for the establishment of a Marine Court, in charge of a special Admiralty Judge, assisted by nautical and professional assessors, as the case may require, which other nations possess and in which we again so unfortunately fail.

As an ex-shipmaster, I have and I think you are aware, honored and favored throughout my career the profession and standing of our marine engineers, and do so today, in particular those whom I had the pleasure of respecting as my co-workers. Both professions are of such an entirely different nature that each requires years of training, practice and long experience to become efficient in either, for which their respective positions may call them in charge of on or below the deck of a steamship. My views have in this respect been clearly laid down in Pacific Marine Review's September issue, under the heading of "B. C. Admiralty Court Decisions," with editorial comment, and I sincerely trust that the Supervising Inspector General has accepted these views in the spirit they are meant, without the slightest intention of disrespect, on which subject at some later date I again intend to express more extended views.

Trusting that your valuable time will permit your acknowledgment of this letter, I am, my dear Mr. Uhler, sincerely yours,

(Signed) E. FRANCKE.

Department of Commerce and Labor.  
Steamboat Inspection Service.

Washington, D. C., December 26, 1911.

Captain E. Francke, Editor Pacific Marine Review,  
379 Arcade Annex, Seattle, Washington.

Sir: In the absence of the Supervising Inspector General, I have the honor to acknowledge the receipt of your very interesting letter of the 19th inst., in regard to certain proposed changes in the maritime laws, and in reply, you are advised that your communication will be submitted, with its enclosures, to the Board of Supervising Inspectors for consideration so far as the Board may have jurisdiction. Respectfully,

(Signed) S. N. HOOVER, JR.,  
Acting Supervising Inspector General.

Department of Commerce and Labor.  
Steamboat Inspection Service.

Washington, D. C., January 26, 1911.

Pacific Marine Review, 379-380 Arcade Annex,  
Seattle, Wash.

Gentlemen: The Bureau is in receipt of copy of the Pacific Marine Review for the month of January, 1912, and your card of the 20th inst., calling attention to an article contained therein under the heading of "U. S. Hydrostatic Tests and Boiler Construction Compared With Other Nations," and in reply, you are advised that the above referred article has been brought to the attention of the Board of Supervising Inspectors of Steam Vessels, now in session in this city. Respectfully,

(Signed) GEO. UHLER,  
Supervising Inspector General.

Department of Commerce and Labor.

Steamboat Inspection Service.

Rooms of the Board of Supervising Inspectors.

Washington, D. C., February 19, 1912.

Captain E. Francke, Editor Pacific Marine Review,  
379 Arcade Annex, Seattle, Wash.

Sir: Referring further to your letter of December 19, 1912, addressed to the Supervising Inspector General, Steamboat Inspection Service, and by that gentleman referred to the Board of Supervising Inspectors of Steam Vessels now in session in this city, relative to certain proposed changes in the maritime laws, you are advised that the Board has carefully considered your communication, and such changes as the Board thought necessary, within its jurisdiction, have been made, which changes will appear in the new edition of the General Rules and Regulations, provided the changes meet the approval of the Department of Commerce and Labor. Respectfully,

(Signed) JOSEPH J. DUNN,  
Secretary of the Board.

#### AUSTRALIA-NEW ZEALAND CABLE

The Australian House of Representatives has passed a bill introduced by the Postmaster General authorizing the Pacific Cable Board to construct and work, as part of the Pacific cable, a cable between New Zealand and Australia. Australia's sanction practically given by the passage of the measure through the Lower House completes the authorization. The laying of the cable will be undertaken early next year, the work being done by the Pacific Cable Board's own steamer.

#### ENDURANCE OF A DIESEL ENGINE

The British firm which is building two sets of eight-cylinder, four-cycle Diesel engines, of 2,500 combined horsepower for the "Jutlandia," have recently tested a single-cylinder model, which corresponds in every particular with the cylinders which make up each eight-cylinder group. According to the Engineer, this "trial" engine, whose cylinder is 22 inches in diameter by 29¼ stroke, completed a thirty-day continuous night and day, non-stop run, twenty-eight days of which were at full power. We quite agree with our contemporary that "such a run as this should go far to convince the superintending engineer that the Diesel engine has now reached a stage of progress at which it calls for at least his most serious consideration."

Work on the dry dock at the Puget Sound Navy Yard, at Bremerton, is rapidly nearing completion. The work on the dock body, pump well, etc., is about 90% effected. The delivery under the contract for pumping machinery, is expected within two or three weeks.



## PACIFIC COAST CO.'S SPECIFICATIONS FOR NEW STEAMER

**T**HROUGH the courtesy of the above company, we are in possession of the specifications, compiled by G. W. Dickie, N. A. & M. E., of 24 California Street, San Francisco, for the first of the two new vessels to be built for this company and for which bids will be opened on March 27th, 1912. The new steamer is practically an improved duplicate of the "Governor" type, of larger dimensions and in every way of the highest and most suitable class for this company's Coastwise steamship service.

Pacific Marine Review notes with regret that this fine vessel will be a coal burner, which no doubt, and justly so, is due to the Pacific Coast Company's large interests in coal mining properties.

Should the company, however, at a later date decide in favor of the now superbly perfected and unquestionably much more economical oil-burning device from every view point, a change to this system is easily accomplished.

We sincerely trust that one of the Pacific Coast ship-building yards will become the successful bidder, having in their favor, against Eastern firms, the cost of bringing the new vessel from the Atlantic to the Pacific, which is in itself a considerable item.—Ed. Note.

## Dimensions

Length over all .....	440' 6"
Length between perpendiculars .....	424' 8"
Breadth moulded .....	53' 0"
Depth moulded .....	29' 0"
Depth of double bottom center line .....	3' 10"
Depth to main deck about .....	21' 0"
Main deck to upper deck .....	8' 0"
Upper deck to shelter deck .....	9' 6"
Shelter deck to bridge and forecastle deck .....	8' 0"
Bridge and forecastle deck to boat deck .....	8' 0"
Crown of beam in 53 ft. ....	0' 10"
Designed rise of floor .....	2' 6"

## Dead Weight Capacity and Draft

The vessel to have a dead weight capacity of 3,725 tons, consisting of 2,545 tons of cargo, 1,000 tons of coal, 90 tons of passenger and baggage, and 85 tons of stores, on a skin draft of water not exceeding 22' 6" even keel when complete and ready for sea, with steam up and all spare gear on board. This carrying capacity to be determined when preparing the vessel for trial, which will be made with these weights added to the vessel in light condition.

## Class and Surveys

The vessel and fittings to conform to all the requirements of the rules and regulations prescribed by the Board of Supervising Inspectors for Steam Vessels of the United States, and to be constructed under the special survey of the American Bureau of Shipping for the highest class A-1 for twenty years and to be provided with a classification certificate, test certificates for steel material in hull, certificate for anchors, chain cables and wire hawsers.

## General Description

The vessel to be constructed generally of steel, in accordance with the A-1, 17-year rating of the American Bureau of Shipping for vessels with three decks below a poop and forecastle and shelter decks. To have a straight stem, and elliptical stern, a flat keel and double bottom, subdivided by water-tight floors, and a longitudinal water-tight vertical keel plate, fitted complete as water ballast and fresh water tanks. To have two steel pole masts, four main hatches, six side hatches on the main deck and two side hatches in No. 2 hold on lower deck, four coaling ports, twelve side cargo ports and four side passage ports. Four derricks to be fitted to each mast. The two on the side of the foremast to be capable of

handling 15 tons. To have eight steam cargo winches and two steam boat winches.

Accommodations to be provided for a crew of about 150. To have accommodations for about 400 first-class, 100 second-class and about 100 third-class passengers.

Wellin davits, electric heating apparatus, steam, electric and refrigerating machinery of all kinds will be installed.

## General Description of Engines

The vessel is to be fitted with two sets of triple expansion, surface condensing engines; high pressure cylinders, 29½" diameter; intermediate pressure, 47" diameter; low pressure, 76½" diameter, with a stroke of 54". The power to be collectively 7,000 indicated horsepower, at about 84 to 88 revolutions per minute. Engines to be arranged with three cranks placed at equal angles, and to drive right and left-hand screw propellers turning outboard. Boilers to be ten in number, single ended, four being in the after fireroom and six in the forward fireroom. They will be placed side by side on each side of the ship and arranged to fire thwartship. One fireroom common to all when the doors are open in the dividing bulkhead.

Boilers to be of the Scotch Marine type, to be fitted for natural draft, and to be constructed for a working pressure of 180 pounds. The whole installation to be of the most modern type. Boilers to be constructed especially with a view to accessibility for examination and to be duplicates of those on the company's T. S. S. "Governor." There will be ten single-ended main boilers, having in all thirty Morison Suspension Furnaces.

Propellers to be of manganese bronze.

The electric installation to consist of three direct connected, 110 volt generating sets. Each set to have a capacity at normal load of 50 K. W.. About 850 incandescent lamps will be required.

The Seattle Construction and Dry Dock Co. will launch four of the five whalers now under course of construction the latter part of this month. The fifth whaler will slide down the ways early in April. The new steel passenger steamer, "Sol Duc," building for the Inland Navigation company, will be launched in about two months. The work on the new passenger steamer, "Potlatch," for the same company, is well under way.

The approximate percentages of completion of the U. S. submarine torpedo boats under construction in this yard, are as follows:

'F3" .....	93%
'F4" .....	93%
'H3" .....	52%
'K4" .....	19%

The work on the two submarine torpedo boats being built for the Chilean government is rapidly progressing.

The dredging of the basin for the new 12,000-ton floating dry dock is well under way, and the construction of the pontoons for the dock was commenced during the end of February.

At the stockholders meeting of the Alaska Coast company held on February 9th at Tacoma, Wash., the following trustees and officers were elected:

Trustees: H. F. Alexander, Chester Thorne, William Jones, S. A. Perkins, M. A. Arnold.

Officers: H. F. Alexander, president; Chester Thorne, vice-president; William Jones, treasurer; C. W. Wiley, manager; J. D. Amos, secretary.

### THE M. S. "SELANDIA" ON TRIAL TRIP

The ocean-going motor ship, "Selandia," built by Messrs. Burmeister and Wain of Copenhagen, completed a most successful trial trip on February 14th, 1912, which is truly a red letter day in the epoch making Diesel engines era for ocean-going motor ships. The "Selandia" is 370 feet long, between perpendiculars, 53 feet beam and of 30 feet moulded depth to upper deck. The gross tonnage is 4,900 tons, net registered 3,200 tons, with a dead weight capacity of 7,400 tons, having a displacement of approximately 9,800 tons. Loaded with about 1,000 tons weight, consisting of oil fuel, galley fuel and fresh water, the vessel made an average of 13.35 knots over the measured mile in Copenhagen Sound. With a full cargo, her speed is estimated to be over 11 knots. Two Burmeister and Wain oil engines, a perfected Diesel type are propelling the vessel, at 1,250 D. H. P. (140 revolutions per minute) each, or about 1,500 I. H. P., the aggregate power on twin shafts is 3,000 I. H. P. The engines are of the 4-stroke type and single acting, and are reported as perfect and handy as could possibly be desired.

The vessel has three pole masts. The mizzen is utilized as an exhaust for the gases of the main and auxiliary engines. These gases, however, pass through water-cooled silencers before entering the mast, which is, therefore, not unduly heated. She is fitted with electric light and with wireless telegraphic apparatus, and nothing has been omitted or spared to make her complete and thoroughly up to date in every detail affecting safety, comfort of passengers, and economy of working. Both the vessel and her machinery have been constructed under the special survey of Lloyd's Register, and will receive the highest class of that society.

The owners of the Selandia are the East Asiatic company of Copenhagen, a progressive shipownery under the Danish flag, the vessels of which are trading to the Straits Settlements, East India and China.

Two sister ships of the "Selandia," the "Flonia" and "Jutlandia," will likely make their trial trips in the near future, comprising this company's present motor fleet. This Danish enterprise is a new realm of shipbuilding, which will be augmented by two more ten thousand ships and six vessels of six thousands tons, all to be propelled by oil engines. Such policy should stir this country to some extent, since oil fuel is produced in such large quantities on our shores. During the trial trip, shipowners, shipbuilders, and engineers who accepted the invitation of the builders, were largely represented by England, Germany, Holland, Norway and Sweden.

Pacific Marine Review extends to the owners and builders of the "Selandia" its congratulations upon the splendid results obtained on this trial trip, which from start to finish was completed without the slightest hitch.

### NEW VESSELS CLASSED BY LLOYD'S REGISTER DURING 1911

During 1911, 670 new vessels of 1,373,399 tons, have been classed by Lloyd's Register. Corresponding with the general movement of the shipbuilding industry the present figures show an increase on those for 1910 of about 316,000 tons. Of these vessels, 603 of 1,356,591 tons are steamers and 67 of 16,808 tons are sailing vessels.

With the exception of 47 small wood vessels of 1,153 tons and 5 iron vessels of 704 tons (including one steamer of 436 tons) the material used in the construction of the whole of the tonnage classed was steel.

The output of sailing tonnage, which formed 25 per cent of the tonnage classed in 1891 and 30 per cent in 1892, and which had since steadily decreased, is somewhat larger for 1911 than for 1910, which latter year recorded the smallest amount of sailing tonnage ever classed in one

single year by the society. The figures for 1911 include two large steel sailing vessels, each of over 3,000 tons, built in Germany. The percentage of sailing tonnage to the total tonnage classed for 1911 is 1.22 as against 0.2 for 1910. For the five years 1905-1909 the yearly average was 0.79 per cent.

A large number of vessels of special design were classed during the year. These comprised 24 steamers built on the longitudinal system of construction, with a total tonnage of 109,113 tons, including 3 for the Great Lakes of America, and one on the topside tanks system; 6 vessels fitted for burning liquid fuel; 5 steamers of the cantilever framing and topside tanks type; 1 steamer, "Shinyo Maru," fitted with steam turbines; 2 steamers, "Orama" and "Demosthenes," with a combination of turbines and reciprocating engines, and the S. S. "Holzapfel I," fitted with engines worked from a suction gas plant and with screw shaft connected by a hydraulic transformer; together with other steamers intended for channel and coasting purposes and numerous vessels of various special types, such as motor yachts, yachts, dredges, river steamers and barges, tugs, fishing vessels and ferry boats.

The average size of the steamers classed during the past year is about 2,250 tons. Excluding vessels under 500 tons, in order to avoid the diminution caused by small coasting vessels, fishing vessels, yachts, etc., the comparative averages for the past few years stand as follows:

	1911	1910	1909
Steam .....	3,723	3,341	3,007

During 1911, 26 steamers of over 7,000 tons each have been classed, as compared with 28 in 1910, and 17 in 1909. Three of the steamers classed during 1911 were over 13,000 tons each, namely the "Franconia," the "Laconia" and the "Shinyo Maru."

Of the tonnage classed during the year 1,132,969 tons, or about 82½ per cent, have been built in the United Kingdom. Among foreign countries, Germany contributed the largest amount of tonnage (76,239 tons), then follow the United States (45,473 tons), Holland (35,399 tons), Japan (22,596 tons), France (21,597 tons), and Austria-Hungary (15,435 tons).

This return includes a statement showing the countries for which the tonnage that has been classed was built. The tonnage built for the United Kingdom was 898,722 tons, and 474,677 tons for other countries. Among the latter Germany leads with 103,641 tons; then follow: Austria-Hungary, with 67,512 tons; Holland, 49,443 tons; the United States, 47,344 tons; Japan, 42,410 tons; British Colonies, 28,479 tons, and France, 24,253 tons.

W. R. Grace & Co., New York, owners of the Merchants Line, from New York to Chile, Peru and Ecuador, have closed a contract with the William Cramp & Sons Ship and Engine Building Co., Philadelphia, for a 10,000-ton steamer which will be the first vessel belonging to that firm to have an American register. The new vessel will be over 400 ft. long and will have passenger accommodation, and so constructed that she can burn coal or fuel oil. The new craft will be ready for delivery in eleven months, and will engage in the coastwise trade between the Pacific and Atlantic coasts upon the opening of the Panama Canal.

The new Canadian Pacific Railway steamer, Princess Sophia, built by Messrs. Bow, McLachlan & Co., Paisley, England, recently completed her trials, which were most satisfactory, a speed of 14 knots being easily attained, which is in excess of contract requirements. The Princess Sophia is a single-screw steamer, 245 ft., by 44 ft., by 18 ft., with triple-expansion engines, and has been specially designed for services on the Pacific Coast. The steamer is fully appointed in every respect as a first-class passenger steamer, with accommodation for about 200 passengers.

## SHIPPING AND ALLIED FINANCE

By H. B. JAYNE

THE following comprehensive financial shipping review, dated at London, 23rd of February, has been forwarded to this office by Mr. Jayne and will no doubt prove of interest and value to all concerned.—Ed. Note.

"The most important recent event in shipping finance has been the purchase of the Union Castle Line, in service between the United Kingdom and South Africa, jointly by the Royal Mail Steam Packet Co., which about a year ago acquired the Pacific Steam Navigation Co., both companies being well known and dominating the South American trades and West coast trades south of Panama, and by Elder Dempster & Co., Ltd., at the extraordinary price, at least in my judgment, an extraordinary price, of £32/10s per share, per £10 share, which shares in the early part of last year were quoted at £11.

I have a great regard for the Royal Mail Steam Packet Co. and for its physical administration, but I venture to predict that if its principal directors, Sir Owen Phillips and Lord Pirrie, continue their present scale of grand finance, and amalgamation of shipping properties, which are not proper subjects for grand finance, and "bubble appreciation," being more associated with rapid depreciation, as demonstrated by the International Mercantile Marine Co., and the meteoric career and destruction of several previously sound domestic steamship companies in New York, attempted by Morse, of "Ice King," and subsequently more unpleasant fame, I predict that it will not be many years before we shall witness a collapse and financial reconstruction of the Royal Mail Steam Packet Co., and its subsidiaries.

The extraordinary circumstances which have governed and advanced the freight market during the last twelve months, to wit an abundant cotton crop in the United States, grain movements from the Argentine, the earlier stringency in the freight market caused by international complications, between Germany, France and England, and rumors of war and the subsequent actual minor war between Italy and Turkey, as well as many other obvious and temporary causes, do not necessarily indicate permanent extraordinary demand for tonnage, whereas there is every universal indication of permanence in the advanced cost of wages, insurance, coal, etc., and in every detail of operation.

I know that many in London will criticise me for my daring to disagree with such publicly accepted shipping experts as Lord Pirrie, so well known throughout the shipbuilding world, as the head of those great and successful shipbuilders, Messrs. Harland & Wolff, of Belfast, builders to the White Star Steamship Co., and with Sir Owen Phillips, who has more recently been brought into public notice, in connection with these and previous steamship amalgamations.

In April, 1910, Lord Pirrie and Sir Owen Phillips, respectively chairman of the Royal Mail Steam Packet Co., and chairman of Harland & Wolff, Ltd., formed Elder Dempster & Co., Ltd., to acquire from the executors of the late Sir Alfred Jones, the assets and business of Elder Dempster & Co., for which the new company paid £500,000 subject to the liabilities.

The prospectus contains the following statement: "In making the purchase Lord Pirrie and Sir Owen Phillips did not employ professional valuers, but they have made a careful estimate of the value of the assets, and are of the opinion that the net value thereof exceeds the purchase price by the sum of £400,000 at the least."

This is interesting inasmuch as Lord Pirrie and Sir

Owen Phillips, in connection with the purchase of the Union Castle Line, at £32 per share, which obviously requires special explanation, point with pardonable pride to the justification of this valuation in the case of Elder Dempster & Co., and now add:

"Speaking now with a thorough knowledge of the assets derived from managing the company's affairs for nearly two years, they consider that their estimate was conservative, and that since that time the value of the assets has materially appreciated."

On the other hand I should like to ask Mr. Owen Harrison Williams, banker of Liverpool, and sole executor of the late Sir Alfred Jones, whether he did not receive an offer from the Cambrian Navigation Collieries Co., Ltd., of Cardiff, South Wales, the principal controlling factor in the South Wales coal trade, and now so much before the public, in connection with the threatened national coal strike, and/or from those connected therewith, to purchase for £600,000, accompanied by a substantial deposit in proof of bona fides, and if so why in capacity of executor, he did not set one offer against the other, in which case I am creditably informed, a purchase price of £800,000 might have been realized.

I courteously but definitely ask Mr. Harrison to answer me upon this point, aware that this publication circulates in many important steamship and marine insurance offices in London and Liverpool, and also appreciating that this point is of special interest to the beneficiaries in the estate of Sir Alfred Jones, deceased, and also concerns the reputation of his executor.

That the valuation put upon the business of the Union Castle Line by the Royal Mail Steam Packet Co., will be equally successful I venture to doubt and time only can reveal.

In my judgment a few years of acute depression, for which we have ample precedent in the shipping business, would place these unwieldy combinations in a serious position, and would sweep away their small reserves. Much is expected of the Panama Canal, but in my judgment there is a great disposition to over estimate and exaggerate its immediate and beneficial effects. I anticipate a sharp decline in freights and obviously as it will shorten many of the great commercial routes it will take a smaller number of vessels to cover present commercial movements and those therein now engaged, when diverted to the shorter route, can perform a higher percentage of service.

Messrs. Elder Dempster & Co., Ltd., and the Royal Mail Steam Packet Co., Ltd., have recently made two large debenture issues respectively £1,000,000, 5% @ 94 and £400,000 4½ at par, and £850,000 5% (practically a second mortgage debenture stock), at 99% to complete the Union Castle purchase, none of which issues have been well received either in London or Paris.

The former managers of the Union Castle Line, Messrs. Donald Currie & Co., receive £700,000 for retiring in favor of the new combination.

In other finance of direct or indirect interest to the steamship and allied interests on the Pacific Coast may be noted the recent issue by the City of Tokio of a 5% £9,175,000, the biggest municipal issue on record, for the purchase of electric tram-ways and electric lighting undertakings from the Tokio Railway Company. Four million pounds was issued in Paris at 98¾ (the expenses of issue and taxation being highest in Paris), where it was a great success; £3,175,000 in London at 98 where it was not so well received, 50 per cent falling on underwriters and £2,000,000 in New York at 97½.

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It is no more than truth to say that in all essential details, the type of vessel now almost wholly extinct was thoroughly familiar to the men of a hundred or more years ago and my purpose of this article is to elucidate the difference then and now, also what we have omitted to do to elevate a profession which always must and will more so in the future, take a most prominent part in every trading nation's success, as in the past, along with those who have excelled us in many respects.

The traditions of the sail period still linger, with which the marling spike seaman is so closely connected, an expressive phrase derived from his chief tool, characterizing the whole professional equipment of the then "mechanic of the sea," of which many proudly bore the title A. B. before they ever aspired to attain a position in connection with the responsibility of being in charge of a watch on the quarter deck.

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Thus, responsibility has increased a thousand-fold. It is true, instruments of perfect decision and much greater capability, have been created for practical use. It will, however, be wrong to infer that thereby the duties of a navigator have been rendered less arduous or that he is in any degree being "coddled" or fed with a spoon; on the contrary the claim upon energy and endurance, upon vigilance and nerve, are indeed greater than ever, notwithstanding these refined appliances, the outcome of the skill of modern mechanicians, which were, perforce, called into existence by the exigencies of rapid transit's constant upward march and its steady increase. Without these appliances, and the right kind of men to use them, speed, which costs so enormously, would in a measure be thrown away, vessels of present sizes, with the apparent prospect of further increase and the natural, large cost of operation, cannot afford to be conducted at sixes and sevens, nor can they be permitted to wander at large over the ocean a la Columbus. To do so would interfere in every way with desired results, the gilt on the gingerbread perhaps permitting a less speedy though more skillful rival to slip in first. Just fancy the discomfiture of the one, the jubilation of the other and how the engineer of a high-speed vessel would swear! The atmosphere of the mess room would be perfectly blue with parliamentary language, for no amount of "cracking on" or "firing up" would compensate for bad courses, eventually resulting in having "to skirmish round" for one's port in thick weather; it would simply be miscredited energy of an expensive kind.

Hence, this great need in our highly pitched competitive times for sound professional knowledge which will keep a vessel's stem pointing straight ahead on its great circle course, or coast course for that matter, for the destination during every single minute of night and day. Owners alive to this fact, are becoming more and more particular in selecting men for command who are in possession of capability and efficiency in the truest sense of the terms.

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It is only natural that in this progressive age, social advancement is essential and what in bygone days could appreciatively pass under the "rule of thumb," "rough and ready principle," or it is "near enough for a collier," is in direct controversy to new doctrines. Thus, under convictions slowly recasting, remodelling in our country is needed in many ways. For this reason, we are confronted with two important questions, first: Are we training the merchant sailor according to old doctrines? Second, how are we training the future officers for the profession in regards to seamen's art, the executive abilities necessary to successfully operate these ships and the indispensable discipline, so essential on board of every vessel and more so for those requiring large crews.

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This refers in particular to the Pacific Coast. Notwithstanding these facts, however, some good has been created by these unions for the betterment of housing crews on shipboard as well as in some other directions to elevate their social standing. How deeply routed the obligations to former associations are in the young officer who, through his good conduct and with the necessary ambition, is elevated to this rank is startling and while it must work not only detrimental in the first years of his service as an officer to essential discipline on shipboard, it often hangs on, as it were, throughout his life's career as a shipmaster, not only degrading to his standing in the eyes of the subordinates on shipboard in particular, but detrimental to his superiors ashore and in consequence to a service in general, which is proven by the fact set forth in this article as an example.

We must admit some exceptional good material, in relation to virtues of faithfulness, conscientiousness and in many ways efficiency, has been recruited from such training for certain type of vessels, while other qualities of just as much importance are sadly lacking.

Executive ability with the essentiality of discipline so intimately related to the attainments of higher education can in this progressive era not be obtained and maintained in any service with satisfactory results without the change of antiquated doctrines.

A few years ago, entrusted with the responsibility as an assistant to the operating department of a steamship company on this Coast, I visited a coastwise vessel of this fleet.

During the time of discharging the cargo, in my urgent desire to interview its otherwise successful master, whom I positively knew was on board, I made numerous inquiries for him, but all in vain. To my amazement and personal disgust, I made the discovery of eventually finding the commander of a fairly good sized and somewhat modern passenger and freight steamer strenuously employed, enjoying a game of poker with his subordinates in the room of one of the officers of his vessel, creating a decided defeat of expectation and a bitter disappointment!

Such conditions I attribute to the general lack of fundamental principles in education for a sphere, for which our navigation laws are primarily to blame and to which this article is in particular devoted.

An act for the establishment of marine schools ashore, consisting of two distinct parts, the one for nautical purposes, to promote the education of the craft, the other for engineering purposes to promote and elevate the faculty of marine engineering with governmental aid, free of charge to all, who have given sufficient evidence of necessary practical training, should be encouraged on well defined lines.

The school should be put in charge of technical and

practical trained merchant marine men, not appointed by political pull, but by a special naval board, the duty of which would principally consist in putting these men first through a thorough examination in regards to their capacity and efficiency before they are permitted to aspire to such responsible position to train others for these respective professions, then after successfully passing the examination appoint those who attained the highest degrees of efficiency.

Nobody wonders whence came the skilled men in Germany in the last few decades who have created the splendid fleet and those who command and officer the vessels sailing under the flag of this country. A thorough and practical system of technical education is largely responsible for the success Germany has attained in this direction. Likewise, Holland, Belgium and all Scandinavian countries have these schools established in their principal cities of the coast. There are a dozen ships in the former country for training sailors and officers for the merchant marine, as well as for the imperial navy. Every young officer on board a German steamer has been educated for his profession as thoroughly as a doctor, a lawyer or an electrical engineer. The naval reserve of foreign countries is the back bone of their respective navies, which could not possibly find more competent navigating material than the officers of their merchant marine, in whom the discipline and association during their time of repeated naval service, transplants naval inspiration under the flag of the merchant marine and commercially throughout.

The pick of material of the profession under foreign flags is in the services of the Cunard, the White Star, the Nord Deutcher Lloyd, the Hamburg-American line, the Generale Trans-Atlantique and many other steamship companies which services recruit cadets or apprentices from their own school ships, in both deck and engine departments, who become a credit in their respective spheres to the company's noble vessels, on which they serve in responsible positions now and will in time to come. Is it thus surprising that we are lacking in what we must admit superior material? We often sneer at the United States navy, but don't let us forget that the American navy has a much harder task to perform in training crews than foreign navies have, for we have no merchant marine from which to draw, which other nations possess. I vividly recollect the remark of a native of the state of Maine, who has long since retired, commanding a Trans-Atlantic liner some seventeen years ago, when reprimanding a junior officer, after the exercise of boat and fire drill for some breach of etiquette during this manoeuvre: "I wish you thoroughly to understand that although we are not the United States navy, you must remember we endeavor to conduct ourselves next to it." This is what the spirit ought to be!

That the American sailor is almost extinct and that the American born captain of the merchant marine can almost be counted on the fingers of one's hands is naturally due to other reasons, so well known and so frequently discussed. Great credit is due to the states of New York, Massachusetts and Pennsylvania, with their school ships, through which the foundation of excellent timber is laid to build upon. Splendid results have been achieved in producing the desired type of men, who are today limited but employed successfully in responsible positions in this profession, for which our country at large has done so little.

With such defined outlines, it is of particular interest to see whether we have kept pace with the time and bettered conditions, first, from the examination point of view.

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practical trained merchant marine men, not appointed by political pull, but by a special naval board, the duty of which would principally consist in putting these men first through a thorough examination in regards to their capacity and efficiency before they are permitted to aspire to such responsible position to train others for these respective professions, then after successfully passing the examination appoint those who attained the highest degrees of efficiency.

Nobody wonders whence came the skilled men in Germany in the last few decades who have created the splendid fleet and those who command and officer the vessels sailing under the flag of this country. A thorough and practical system of technical education is largely responsible for the success Germany has attained in this direction. Likewise, Holland, Belgium and all Scandinavian countries have these schools established in their principal cities of the coast. There are a dozen ships in the former country for training sailors and officers for the merchant marine, as well as for the imperial navy. Every young officer on board a German steamer has been educated for his profession as thoroughly as a doctor, a lawyer or an electrical engineer. The naval reserve of foreign countries is the back bone of their respective navies, which could not possibly find more competent navigating material than the officers of their merchant marine, in whom the discipline and association during their time of repeated naval service, transplants naval inspiration under the flag of the merchant marine and commercially throughout.

The pick of material of the profession under foreign flags is in the services of the Cunard, the White Star, the Nord Deutcher Lloyd, the Hamburg-American line, the Generale Trans-Atlantique and many other steamship companies which services recruit cadets or apprentices from their own school ships, in both deck and engine departments, who become a credit in their respective spheres to the company's noble vessels, on which they serve in responsible positions now and will in time to come. Is it thus surprising that we are lacking in what we must admit superior material? We often sneer at the United States navy, but don't let us forget that the American navy has a much harder task to perform in training crews than foreign navies have, for we have no merchant marine from which to draw, which other nations possess. I vividly recollect the remark of a native of the state of Maine, who has long since retired, commanding a Trans-Atlantic liner some seventeen years ago, when reprimanding a junior officer, after the exercise of boat and fire drill for some breach of etiquette during this manoeuvre: "I wish you thoroughly to understand that although we are not the United States navy, you must remember we endeavor to conduct ourselves next to it." This is what the spirit ought to be!

That the American sailor is almost extinct and that the American born captain of the merchant marine can almost be counted on the fingers of one's hands is naturally due to other reasons, so well known and so frequently discussed. Great credit is due to the states of New York, Massachusetts and Pennsylvania, with their school ships, through which the foundation of excellent timber is laid to build upon. Splendid results have been achieved in producing the desired type of men, who are today limited but employed successfully in responsible positions in this profession, for which our country at large has done so little.

With such defined outlines, it is of particular interest to see whether we have kept pace with the time and bettered conditions, first, from the examination point of view.

The two principal so-called licenses I undertake to discuss in this article are the coastwise and the so-called deep water license for masters, of which naturally the latter should be the superior of the two and consequently more difficult to obtain.

According to our present system, we compute not only the Bering sea, but also from our shores, the Hawaiian Island trade, under the category of coastwise trade. How sublimely ridiculous, such ruling does appear when we stop to consider that on either voyage the ship is hundreds, nay, a thousand miles off the coast! The master who can navigate his vessel from any coast port to Unimak Pass or the Hawaiian Islands should certainly be capable of navigating his vessel around the globe. Why then encourage coastwise examinations when the other requires more study and perfection?

Furthermore, compare the coasting on the Atlantic with such on the Pacific. The east coast is convex, or extending out, enabling the navigator to follow the coast line, shaping his courses from point to point or light to light, without losing distance or time. The west coast is concave, hollow curved and after leaving certain points, the vessel is practically in the open for the larger part of the distance, for instance, between Seattle and San Francisco. Thus again, why encourage and so extensively permit coastwise certificates? It is a one-sided tactic and does not contribute towards elevating a profession which is in need of exaltation from many view points. In the intrinsic study of our existing rules for qualification to obtain a certificate of competency (license) I ask why should a sailing ship of less or more than 700 tons gross be permitted to navigate without a licensed mate? Is it not endangering life and property upon the high seas and upon our coasts? It is only about nine years ago when it became compulsory for mates of sailing vessels of 700 tons gross and upward to hold a license. The result was that unlicensed men stepped out to make room for the licensed navigator, removing from our sea boards an almost unpardonable menace to life and property. A later ruling, however, provides that only those sailing vessels carrying passengers shall be required to carry a licensed mate. What an absurdity? How many of our fore and aft schooners carry passengers?

Are there any which do, with the exception of the master as part owner, who may carry his wife? Who made such flimsy rulings? It must be apparent to any observer that this latter change, to express it mildly, borders on ignorance of the worst kind. Does it not permit the less scrupulous owner or master to employ the cheaper unlicensed handy-man, thereby jeopardizing to no small extent the safety of crew and tonnage afloat, not mentioning the danger to passenger ships and other vessels which these half officered crafts frequently meet at sea and on our coast. Is this ruling not a direct violation of the International Rules of the Road? Can the latter rule, itself a safeguard, be properly obeyed and carried out by irresponsible men?

Every vessel under way, whether steam or sail, large enough to puncture the hull of another vessel through improper handling, navigating waters frequented by other vessels should at all times be in charge of and handled by a duly licensed officer. How can we under such dangerous rulings expect our underwriters to lower insurance rates?

A further advance should be made in thoroughly stipulating defined rules and named problems, which are expected and required to be worked out by each qualified candidate for examination, to be of a definite kind and amount suitable to the respective grade of license, so that each and all aspiring for an examination may thoroughly prepare themselves along such defined lines, instead

of having a taste of almost everything and no real sound knowledge of anything before and after passing for second mate or mate.

What must we think of a licensed mate who has never seen an azimuth mirror and is incapable of using this important and in our days absolutely indispensable instrument? What of a man with a second mate license who takes the Venus for the Pole Star? What of a steamship officer who does not know how to work a bearing of moon or star? How in the world did such men obtain their certificates? For all these and previous questions I crave the gracious forbearance of the critic to answer. Is this not sufficiently convincing that something is wrong somewhere, radically and methodically wrong, but our marine laws never flinch they have been inefficient so long that it almost appears the spirit to let them remain stagnant, although the very face of ocean commerce is changing due to America's ingenuity and enterprise in the completion of the latest world wonder, "the Panama Canal of the World."

But we must remember that as long as the spirit of such stagnancy continues to exist, we will continue to remain among the big nations somewhat of a laughing stock as the smallest maritime nation, with more facilities and probabilities than any one, as far as coast line and trade in general is concerned. It is indeed depressing and humiliating to compare the maritime law of other nations with our own and I refrain in this instance from using more space for comparative purposes, which is degrading for us in the eyes of others.

In relation to defined rules and named problems, I would suggest that if the entire revision of the code is not undertaken, which is by many considered such an enormous task, but which it is not in reality, to at least insert amendments to read, for example, as follows:

"A thorough verbal examination is to be passed in relation to practical seamanship for all grades stipulated, including the Rules of the Road, knowledge of Maritime Laws, etc."

With reference to nautical examination for ocean service:  
For Mates—

1. Multiplication by Common Logs.
2. Division by Common Logs.
3. Day's Work.
4. Latitude by Meridian Altitude of the Sun.
5. Parallel Sailing.
6. Mercator's Sailing.
7. Time of high water.
8. Amplitude.
9. Time Azimuth.
10. Longitude by Chronometer and Altitude Azimuth.
11. Time of Star's Meridian Passage.
12. To find names of stars from Nautical Almanac with in a given distance of the Meridian at a certain time, and also the distance they pass north or south of the Zenith.
13. Compute the obs. Alt. of a star for a given place.
14. Latitude by Meridian Altitude of a star.
15. Star Time Azimuth.
16. Latitude by reduction to the Meridian.
17. Latitude by Pole star.
18. Latitude by moon's Meridian Altitude.
19. Correction for soundings.
20. Magnetism.

For Masters—

The same as for mates in the entirety with the addition of:

1. Sumner method.
2. Compass Syllabus.
3. Compass adjustment.
4. Latitude by Double Altitude.
5. Position of ship by Double Chronometer Problem.



6. Great Circle Problem.
7. Error of Chronometer by altitude of sun or that of other heavenly bodies.
8. Extra chart problems.
9. Questions on modern shipbuilding.
10. Subject of stability.

The above would favorably compare with the knowledge one must possess to obtain either grade under foreign flag, which however, is still excelled for instance by Germany and Holland. Great Britain requires plane and spherical trigonometry for the extra master's examination only. The above two countries mentioned make this inclusion compulsory not only for the master but from and including the second mate's examination, in addition to the above qualifications, some knowledge of modern marine engineering and medicine in general is required.

It is only too true that the law must be behind the advance guard of progress in general to work out necessary changes, if not in time the entire revision, but it is generally known that our navigation laws are utterly obsolete and in many cases unworkable, since generations past. In the introductional part of this article, I have spoken of periods of fifty and one hundred years ago, but let us admit the fact that some parts of our maritime code date back as far as 1789 and 1814 respectively, notwithstanding the progress other maritime nations have made in this and other respects. Would it not conclusively appear that those entrusted with the innovation and essential elevation of maritime affairs in our country are still under the spell of Orpheus, the mystic tralian poet, reputed to have entranced inanimate objects by the music of his lyre?

E. F.

#### RAPID CANADIAN DEVELOPMENT

At the recent annual meeting of the Canadian Bank of Commerce it appeared that the net profits for the year ended November 30, 1911, were \$2,305,410, amounting to 21.76 per cent on the capital employed. The president in his speech said:

"Canada is preparing for the settlement in one year of 400,000 immigrants, to provide for whom in everything from transportation to housing is a huge task. The import returns for 1911 show settlers' effects at only \$14,000,000, doubtless far below the actual value, but the main part of the settlers' property consists of money. The estimated wealth of the new settlers for 1911, based on the lowest experience of several years, is about \$160,000,000. The clearing-house returns from twenty cities for 1911 were \$7,336,866,000, against \$6,153,701,000 for seventeen cities in 1910, a gain of 19 per cent; the gain between 1909 and 1910 being 18 per cent. The building permits of the chief cities again illustrate the rate of growth in Canada:

	1910	1911
Montreal .....	\$15,713,000	\$14,580,000
Toronto .....	21,127,000	24,374,000
Winnipeg .....	15,106,000	17,550,000
Vancouver .....	13,150,000	17,652,000

"Proposals for municipal expenditures are on a scale never attempted before."

Canadian municipalities have been heavy borrowers in the London market from January, 1905, to date, as the following statement shows: Winnipeg, \$18,140,570; Montreal, \$12,282,073; Vancouver, \$9,581,652; Calgary, \$4,866,281; Edmonton, \$5,373,102; Maisonneuve, \$4,277,654; Westmount, \$2,433,250; Victoria, \$2,851,394; Toronto, \$1,917,877, and other towns making a total of \$76,174,035.

#### THE CHINESE REVOLUTION AND COMMERCE

The most remarkable features of the revolution in China have been accomplished with a comparatively small disturbance of the finances of the Far East.

Two principal causes have contributed to this stability.

The first, perhaps, is the fact that the revolution has long been anticipated by commercial interests in the southern part of China and conditions discounted in advance. It has also been a cardinal principle with the revolutionists from the beginning of the movement that all national contracts of China shall be observed in the most scrupulous manner, that foreign interests shall be protected at every hazard, and that, so far as may be possible, all legitimate business interests shall be guarded in every way. It has been the announced plan of the revolutionists to restore order in the country even before proceedings to the formation of a permanent government.

The business world also has agreed in the idea that whichever way political affairs in China went the future promised improved conditions under which trade could be carried on. Most of the members of the provisional government at Canton, formed after the abdication of the viceroy, were members of the Sze Yap and the Hongkong Chinese chambers of commerce, the two leading Chinese business organizations of Hongkong. The Chinese business community, on which, after all, the entire structure of foreign commerce in China rests, has thoroughly understood the nature of the movement, what it has been intended to accomplish, and what it would mean eventually in a business way. While the revolution itself has, of course, produced a strain, the general undertone of the situation in commercial circles has been one of confidence and optimism.

#### HIGHER OCEAN FREIGHT RATES

Consul General W. Henry Robertson, of Callao, reports that under an agreement between the Pacific Steamship Navigation Company, the Lamport & Holt Line, the Gulf Line, the Kosmos Steamship Company and the Roland Line, the five transportation organizations that enjoy the greater part of the shipping trade between Europe and the ports of the Pacific, freight rates on merchandise from European ports to Peru were raised on December 1, 1911, and that the companies are engaged in preparing a new tariff of rates on freight from Peruvian ports to Europe. Unless similar action has been taken by the steamship lines bringing merchandise from the two coasts of the United States, the consul is of the opinion that this increase and proposed increase in freight rates should operate favorably toward American exports to Peru.

Consul Arthur Garrels, of Catania, reports that a combination to maintain standard rates on ocean freights between Italian and American ports became operative January 1, 1912, between the Cunard, White Star, Hamburg-American, North German Lloyd, Societa Nazionale di Servizi Marittimi, Lloyd Sabaudo, Veloce, Italia and Sicula Americana companies. Freight rates on the standard Sicilian exports have been more than doubled; but, owing to the competition of similar French and Spanish products in the markets of the United States the consul states that "the question is not of so great interest to the American importer as to the Sicilian exporter."

#### THE ADVANCE IN OCEAN FREIGHT RATES.

While present high ocean freight rates are apparently causing some dissatisfaction among export shippers it should be borne in mind that for the past approximately ten years the steamship companies depending on cargoes for their profits have hardly been making expenses and therefore no grudge should be borne towards the common carrier to be repaid for accrued losses. Freight rates have been advanced not only between the United States and foreign countries, but also from Europe to the countries we transact business with. In consequence thereof no unfair advantage can possibly result towards competing countries.

## THE WEST COAST LUMBER MANUFACTURERS' ASSOCIATION

**U**NDER the above title the following associations have consolidated: Pacific Coast Lumber Manufacturers' Association, Oregon & Washington Lumber Manufacturers' Association and Southwestern Washington Lumber Manufacturers' Association.

Every citizen of the Northwest who has been here any length of time realized that business conditions as a whole in this section are more directly dependant on the lumber industry than on any one single factor in the development of the States of Washington and Oregon. Most forcibly has this been brought home to them in the last three years, during which time the lumber business has been going through a lethargic state that has sent many of the less staple concerns into the hands of receivers and caused the responsible heads of many more to spend sleepless nights wondering from whence would come the wherewithal for the next pay roll. No one not immediately connected with the business can realize what the struggle has been and is. On every turn the lumberman has seemed to face an impenetrable wall bearing down on him and drawing constantly closer. He has faced heavy and oppressive taxes, a slowly lessened demand due to the inroads of substitutes, a forced over-production, freight rates that would not permit competition beyond a limited territory, legislation hampering to the best interests of the business and a growing adverse public sentiment fostered by the public press in its cries of "Lumber trust," when it knew less of the facts than the cheapest laborer in the yards. These are the conditions the lumbermen were obliged to contend with for a long period without any sign of improvement.

It is not plausible, however, that these men should allow the above to engulf them without show of resistance or without doing all within their power to better conditions. For just such emergencies associations were maintained, the functions of which were to afford a common meeting ground for those interested and through which representation could be had, consistent with the magnitude of the industry and of the problems affecting it.

For various reasons three associations were organized some ten years ago within the territory covered by the lumber manufacturing industry on the North Pacific Coast. These operated separately, doing much good for the business. In the early summer of 1911 a consolidation of these three associations was proposed. This move was prompted by the well-founded belief that greater efficiency would result from one body with a corresponding decrease in the expense of maintenance. Thus in August, 1911, the consolidation was perfected and the West Coast Lumber Manufacturers' Association came into being simultaneous with the discontinuance of the three then existing associations.

The objects of the organization are clearly expressed in the following principal by-laws:

First. To establish and carry on a general organization for the promotion of the lumber industry in all its branches, on and along the west or western coast of North America, and territory adjacent and contiguous thereto, and to enlarge the markets and increase the demand for and to promote and facilitate the manufacture, sale and distribution of lumber and forest products of all kinds, and to advance the lumber industry in said territory in every legitimate way.

Second. To gather, compile and disseminate data, reports, statistics and information relative to the properties, uses, values, production, transportation, distribution and consumption of, and markets for lumber and other forest products, to gather, compile and distribute information as to general trade conditions respecting lumber and other

forest products in all markets, and the best and most economical methods of manufacturing, handling, transporting and disposing of said forest products; to gather, compile and disseminate information as to the taxation of forest products and of

Fourth. To fix, establish, maintain and apply a uniform system for the inspection, measurement, grading and weighing of lumber and other forest products; to fix, establish, maintain and promulgate standards of size, manufacture and quality of lumber and other forest products manufactured in the territory above mentioned; to establish, provide and maintain a system of inspection, checking and tallying of such forest products and issuing certificates thereof.

The officers and trustees of the association elected to serve during 1912 are: E. G. Griggs, president; L. J. Wentworth, vice-president; Thorpe Babcock, secretary; C. S. Gilchrist, treasurer; W. C. Miles, manager; J. N. Teal, counsel. Trustees: R. H. Alexander, Vancouver, B. C.; J. H. Bloedel, Bellingham; W. H. Boner, Everett; E. G. Ames, Seattle; E. G. Griggs, Tacoma; F. B. Hubbard, Centuria; W. B. Mack, Aberdeen; E. L. Gaudette, South Bend; L. J. Wentworth, Portland; G. B. McLeod, Astoria; A. C. Dixon, Eugene.

### CANADA'S GREATEST RAILROAD DEVELOPMENT.

It is estimated that the Canadian Pacific Railroad, Grand Trunk Pacific Railroad, and Canadian Northern Railroad will spend \$100,000,000, affording railroad outlets to many new districts. Even with this vast extension the ability of the railroads to handle this season's prospective enormous grain crop is doubted. Through a peculiar combination of conditions, an unheard-of grain blockade in western Canada exists today, and the railroads even urged the deflection of grain shipments to eastern Canadian points through the United States.

#### The Canadian Pacific Railway

One of the first great works to be attempted will be a modern coal-handling plant at Fort William. When the present plant was constructed it was designed to meet the demand for 25 years to come; but coal traffic at the Canadian head of the Lakes has since doubled. The company will also erect there a new 25,000-ton freight shed, and a new dock for lake shipments.

The double-track system now completed from Fort William to Brandon will be fitted with a block system, the first section being that between Fort William and Winnipeg. The bridge crossing the Red River will be enlarged and a double track laid. The most important construction, however, will be a new Winnipeg terminal, costing approximately \$7,000,000. The double track will be continued from Brandon west, to take care of traffic where heaviest; double tracks will be laid between Regina and Chaplin, Saskatchewan; between Marharg and Sunalta, Alberta; and from Vancouver to Hammond, British Columbia (a point 30 miles east).

A new terminal, to cost many thousands of dollars, will be built at Coquitlam, British Columbia. Plans are being prepared contemplating a new station, overhead bridge, and additional wharves at Vancouver.

The Northern branch line from Winnipeg to Edmonton, Alberta, will be entirely relaid with 85-pound steel rails.

Every terminal of the Canadian Pacific western lines has been enlarged within the past eight years, and this year further improvements will be made. Many new stations will be built, Edmonton being most important.

To the elevator at Fort William will be added a new

1,500,000-bushel section, making the total elevator capacity there 9,000,000 bushels.

#### The Grand Trunk Pacific

It is estimated that \$20,000,000 will be spent by this company during the year for construction, including over 600 miles of branch lines already graded and awaiting the steel, as well as over 300 miles of the main line to Prince Rupert, part already graded. This will leave about 200 miles of main line to be completed in 1913. It is estimated that steel will be laid through from Winnipeg to Prince Rupert, and traffic will pass over that line by the end of 1913. The branch lines to be linked up this summer will bring the main line of the Grand Trunk Pacific into touch with a number of enterprising western cities, including Moose Jaw, Saskatchewan, Brandon, Manitoba, Calgary, and Lethbridge, in Alberta Province, and Battleford and Prince Albert, in Saskatchewan Province. Regina was linked up last fall, and a regular passenger service will be given in the coming summer, from Winnipeg to the Saskatchewan capital.

With the opening of the great viaduct across Winnipeg, now rapidly approaching completion, a passenger service will be inaugurated to Fort William, and the company will operate trains in connection with its lake-steamer service, to the Great Lakes. East of Winnipeg, construction is under the Dominion Government; it is expected to take two years for completion from Quebec to Winnipeg.

Many of the branch lines in the west are already graded and will be laid with steel as soon as weather conditions permit and supplies are obtainable. A new 150-mile line will be started from Calgary to Lethbridge. Another line, into Calgary, graded almost up to the city, will be completed the coming summer.

#### The Canadian Northern Railway

This company expects to spend \$25,000,000 in western Canada during 1912 for betterments all over the line, new steel, better stations, and new terminals; also a number of additional lines into new territory, including: A line from Alsack, Saskatchewan, to Munson, Alberta; a 130-mile line from Munson to Calgary; extending the main line 210 miles to the summit of the Rockies; a 92-mile line to Athabasca Landing, opening up new territory; a 170-mile line into the Brazeau coal fields. There will also be much building on the west side of the lakes, and from the summit of the mountains to Vancouver work will be pushed with energy.

In eastern Canada the road will be extended 500 miles from Port Arthur to Sudbury, adding another link to the transcontinental system which is the hope of this company within the near future. This will not be the first construction work of the Canadian Northern east of the Great Lakes, as it already operates lines from Ottawa to Montreal and from Toronto to Sudbury.

One important Canadian Northern extension which it is expected will materially help in handling future grain shipments is the line being constructed southward from Fort Frances, Ontario, to Duluth.

#### CANADA'S NEW WESTERN PORT

Customs receipts at the new town of Prince Rupert, the Pacific terminus of the Grand Trunk Pacific Railway, for the past year amounted to \$101,556, an increase of \$4,170 over 1910. There was handled during the 12 months at Prince Rupert 61,000 tons of freight, which is an increase of over 62 per cent over the preceding period, while no less than 14,094 passengers were carried by the Grand Trunk Pacific over 100 miles of rail between Prince Rupert and Van Arsdol between the middle of June and December 31, or an average of 2,562 passengers per month.

The announcement is made that work on the Grand Trunk Pacific drydock at Prince Rupert will be commenced at once and carried through to completion without delay.

#### TRANS-PACIFIC BERTH

The demand for space on Oriental lines still continues, and engagements on flour are now being made for June shipment. It is reported that in some cases the line managers have been paid rates higher than tariff for accommodations, although the general advance of \$1.00 per ton is not supposed to become effective until September 1st. The lumber rates have also been increased to \$9.00 Japan, \$10 Hongkong and Manila. The bulk of the cotton shipments are now over, as also the export of herring. It is not likely therefore, that further steamers will be chartered for the berth, considering the low rates presently in effect, as compared with the exorbitant prices asked by tramp owners for disengaged tonnage.

#### FREIGHTS AND FIXTURES.

Messrs. Hind, Rolph & Co., 310 California St., San Francisco, report as follows:

"Since our last report there is not much change to advise as far as the steam market is concerned, the quantity of tonnage in sight being so small that charterers find that it is really no use putting their inquiries on the market. About the last fixture done marked the top of the market and was that of the 'Oceano' on time charter for a trip from San Francisco to Japan. For this, charterers paid 9s net. The 'Tampico' was also fixed for wheat from Portland or Puget Sound to Manzanillo at \$5.00.

"The market for sail tonnage has gone considerably firmer the last week or two. It seems to us likely to go higher.

"The 'Philippine' has been fixed for lumber for direct port, Chile for 52s 6d; the 'Georgina' for lumber to Valparaiso for orders, Pigagua range 55s, less 2s 6d direct; the 'Aurora' and 'Aloha' for lumber to Sydney at 47s 6d and these may be said to be the current rates."

#### NEW YORK TO CHILE VIA PANAMA CANAL.

The Hamburg-American Line has placed a contract for a 16,500 ton vessel, which is to be put in the passenger service between New York and Valparaiso when the Panama Canal is opened.

It was recently announced in the company's annual report to increase the capital \$6,250,000 to provide for certain expansions in order to take advantage of the opening of the canal.

Director Ballin of the Hamburg-American Line, is now in this country to look into the company's traffic through the Panama Canal.

#### CHINESE CUSTOMS COLLECTIONS

The customs collection is exceeding expectations. From November 10 to the end of January the net amount, collected in the three foreign receiving banks, British, German, and Russian, available for the loan service, was over 5,000,000 Shanghai taels (\$3,000,000).

The Hongkong & Shanghai Banking Corporation at London received a further telegram from their Shanghai office stating that the local revenue collection for January, amounting to 1,800,000 taels (\$1,000,000) had been paid into the British, German, and Russian banks in Shanghai. It is pointed out that the improvement between the payments made on account of November and December has been maintained.

The foreign commerce of the United States in January was larger than any preceding January. Imports were \$143,557,721, exports \$202,586,074.

## TOLL DISCUSSION OF PANAMA CANAL

By JOHN BARRETT.

**T**HAT Mr. John Barrett's personal, unofficial statement in regard to Panama Canal tolls was timely is proved by the fact that the press at large in this country has commented upon it editorially. There is a prevailing opinion that vessels engaged solely in the commerce between the Atlantic and Pacific coasts of the United States should be allowed to pass the canal free or at a small charge, but there is an extreme variance of opinion as to what should be the tolls on foreign vessels or vessels of the United States engaged in foreign trade. The committee on interstate and foreign commerce of the House of Representatives of the United States is hard at work holding hearings on the question of tolls and we trust will recommend legislation before this session of Congress is completed.

In view of the constant requests for matter connected with the question of tolls and trade of the Panama Canal and for copies of the address delivered by Mr. John Barrett at the annual banquet of the Lake Carriers' Association, at Detroit, Mich., January 18, 1912, extracts from that address are quoted below.—Ed. Note.

"The greatest opportunity today of the United States in foreign trade is to be found in our twenty sister republics lying to the south of us. It is of cardinal and vital importance that our great shipping as well as export and import interests should realize this. We must be up and doing to meet the competition of Europe and even of Asia. We must prepare now to take advantage of the canal when it is done so that it will prove a boon instead of a burden to our country.

"It will be almost a crime upon the judgment of our business interests if the nation is allowed to spend \$400,000,000 to complete the canal and then find that the shipping and commercial interests of our country are not ready to take advantage of it.

"Here I must sound a plain warning. I cannot mince words because of the actual facts which I know. I have to tell you that every important country of Europe which has a merchant marine, and Japan, is making most active and comprehensive preparations to take advantage of the canal. This is as it should be. Those countries and their shipping and business interests deserve credit for it. It would be unfortunate for the commerce of the world if they did not do it. The trouble is that the shipping and business interests of the United States are not making corresponding preparations. I do not say that they do not want to make preparations or have not the energy or ability to do so, but I do mean that in comparison with what the foreign world is attempting we are lagging behind at a dangerously long distance.

"Congress will probably settle the question of tolls for the canal at this session. If it fails to do so, the effect may be most unfortunate upon the preparations of shipping and business interests for the use of the canal. The relationship of tolls to the cost of operating shipping, to the charges that must be made upon cargo, and to the general organization and development of traffic through the canal is so close that a failure on the part of Congress to fix at least the maximum and minimum of canal tolls may mean a loss of hundreds of millions of dollars in the commerce of the United States after the canal is opened.

"The whole success or failure of the Panama Canal may be determined by the tolls. The great point is to make them sufficiently low. If they are above a certain figure, the canal will prove an overwhelming disappointment and the tonnage that will use it will be inconsiderable compared to our expectations. If they are fixed at a reason-

able or low rate, the canal will prove the greatest advantage to the foreign and domestic commerce of the United States of any influence in the history of the country. Careful estimates of expert statisticians are that at least 12,000,000 net tons of shipping will use the canal in the first year, provided the tolls are not too high. Placing even the low valuation of \$50 a ton on the freight carried, this means that \$600,000,000 of trade will go through that waterway, of which by far the largest share should be the commerce of the United States between the ports of the Atlantic and Pacific coasts or between the ports of both and foreign countries. Place the tolls too high and this tonnage can be easily reduced to 8,000,000 tons, or a reduction of \$200,000,000 of value of business done.

"Let us consider this question of tonnage in another way. Supposing a vessel measures 4,000 net tons and the tolls are only \$1.25 per ton, the maximum figure now suggested. This means that a vessel of that tonnage must pay \$5,000 for one way or \$10,000 for both ways through the canal. If the ship makes six trips in a year, this means \$60,000 paid out in tolls, or the interest of \$1,000,000 at 6 per cent. Such tolls may indeed be such a severe tax on shipping and on trade that vessels will in preference go around through the Strait of Magellan, continue to use the Suez Canal or will not get sufficient advantage from the present conditions of the Tehuantepec and Panama railroads to develop the enormous business which we expect through the canal. Personally I would favor a canal essentially free, because it must be admitted that if there were an open waterway between the Atlantic and Pacific at Panama, we would have the ideal condition and opportunity for the greatest development of water trade between the two oceans. As, however, the utilitarian policies of our government will not permit the acceptance of my suggestion of a free waterway, let us make the rates just as low as possible and still satisfy the demand that there shall be a tax on tonnage. In my opinion, as a student of the question of our trade opportunities through the canal, under no circumstances should the tolls on either foreign or American shipping exceed \$1 a ton. If they should be placed at \$0.50 a net ton, the whole world would be astonished at the amount of shipping that would use this waterway.

"We are not building the Panama Canal to produce a revenue. We are constructing it purely for commercial and military reasons. The military reason has nothing to do with the question of tolls, but the commercial has. We are not building the canal for a revenue from tolls any more than we are building postoffices and public buildings to get the revenue from them. The return of revenue to the United States from the canal should be through increased commerce and not through heavy charges on shipping and freight. The question of whether the United States shall tax a vessel a certain amount will have very little effect on the total revenues or expenditures of the United States government, but will have a most direct effect upon the commerce of the nation.

"To what does the Panama Canal open the commerce of the Central West, the Gulf and Atlantic coasts of the United States? From the Mexican-California line south to the Strait of Magellan is a wonderfully potential and extensive coast line of 8,000 miles, forming the Pacific side of Latin America. This coast includes twelve countries—Mexico, Guatemala, Salvador, Honduras, Nicaragua, Costa Rico and Panama, in North America, and Colombia, Ecuador, Peru, Bolivia and Chile in South America. The Panama Canal will give all of the lake section and the central



and eastern portion of the United States a direct approach, therefore, to 8,000 miles of coast line in the very infancy of its commercial and material development. I indulge in no exaggeration when I prophesy for that coast the same kind of development following the opening of the canal which the Pacific Coast states of the United States experienced following the construction of the trans-continental railways.

"Keep in mind some concrete and convincing figures. The Pacific coast of these twelve Latin American countries conducted last year, despite their isolation from the great routes of the world's commerce, a foreign trade with the rest of the world valued at nearly \$500,000,000. Without the canal they bought and sold that amount of business with other countries than themselves. This in turn represents an increase of nearly 100 per cent during the last fifteen years. If, therefore, they can under present conditions of isolation conduct a foreign trade of that magnitude, and with the increase it is entirely logical and rea-

sonable to estimate that when the canal is completed, and if reasonable tolls are charged for shipping, their commerce will grow within ten years to more than \$1,000,000,000 per annum. Of this there is no reason why the United States should not have the largest share. All these estimates are entirely apart from the great trade which the lake section, the Central West and the Gulf and Atlantic coasts of the United States will have through the canal with the Pacific coast of the United States, with Alaska, with Japan, China and the Philippines, with Australia and with Australasia. Even if the actual tonnage of freight carried from the Great Lakes and Detroit through the canal is comparatively small, the great amount of tonnage which will be carried from other sections and the benefit which will come to them, will give them, in turn, a prosperity which will make from them greater demands upon the possibilities of the shipping and the business of the Great Lakes the cities upon them and the tributary country."

## PACIFIC MARINE REVIEW'S SUGGESTIONS MAY RESULT IN CHANGE IN MARITIME LAWS

**W**E TAKE particular pride in publishing the subjoined correspondence with the office of the Supervising Inspector General, Washington, D. C., the board of Supervising Inspectors of Steam Vessels, recently in session at the capital, by Pacific Marine Review, which is self-explanatory and may be of interest to our readers.—Ed. Note.

Department of Commerce and Labor, Steamboat Inspection Service, Washington. December 21, 1911.

Pacific Marine Review, Seattle, Wash.—

Gentlemen: Enclosed herewith you will please find copy of a circular letter sent out by this bureau to the representatives of the merchant marine generally, extending an invitation to meet with the Board of Supervising Inspectors at its next annual meeting in January, 1912, to discuss with it any propositions or suggestions regarding the practicability of the rules and regulations or the necessity of any changes.

If consistent with your practice, it is requested that the circular letter be printed in your paper, in order that as many persons as possible may be informed of the invitation therein extended. Respectfully,

(Signed) D. N. HOOVER, JR.,  
Acting Supervising Inspector General.  
Circular Letter

December 11, 1911.

United States Supervising, Local and Assistant Inspectors, Steamboat Inspection Service, Licensed Officers, Marine Boiler Manufacturers, Representatives of the Merchant Marine and Others Concerned—

Gentlemen: From various sources the attention of the department has been called to the fact that in some instances the application of the rules and regulations of the Steamboat Inspection Service has involved discussion and created some dissatisfaction, stress being also laid upon an alleged lack of uniformity in the administration of the affairs of the bureau. In this connection you are advised that the Steamboat Inspection Service is always willing to consider any suggestion that may improve conditions or make for better administration, and is always glad to take up, consider and discuss any proposed change in the rules and regulations that will insure their better and more uniform application, while maintaining the objects and purposes of the service.

The Board of Supervising Inspectors meets annually on the third Wednesday in January in the City of Washington, and as president of that board I extend to you a very cordial invitation to meet with the board at its next an-

nual meeting and to discuss with it any propositions or suggestions that you may have to offer regarding the practicability of the rules and regulations or the necessity for any changes.

It is requested that some time previous to the meeting you give an outline at least of any proposed changes or suggestions that you may have to offer, in order that the matter may be ready for discussion when you appear before the board. Respectfully, (Signed) GEO. UHLER,  
Supervising Inspector General.

December 19, 1911.

The Hon. Geo. Uhler, Supervising Inspector General U. S. Steamboat Inspection Service, Washington, D. C.—

Re meeting of the Board of Supervising Inspectors.  
To the Chairman of the Board—

My Dear Mr. Uhler: In reply to D. N. Hoover's, Jr., acting supervising inspector general, letter dated December 12, with enclosure of circular letter dated December 11, signed by your good self, Pacific Marine Review takes particular pleasure in conforming with your request to give a short outline of suggestions in relation to the practicability of changes in rules and regulations desired for the improvement of conditions for better administration involving the steamboat inspection service.

In this respect we cannot possibly refer to a clearer discussion than the one published in our November issue under the heading of "Our Navigation Laws and Their Defects," of which we enclose a copy herewith.

In the December issue, we refer you to the other editorial under the heading of "The Drag a Relic of Our Ancient Navigation Laws." Both articles have been carefully compiled and written by the writer, bringing forth a multitude of favorable comments and letters from men of prominence in the transportation field, as well as from several representatives in the House and the Senate committees.

While the writer is fully aware of the fact that it is up to Congress to revise these ancient laws, so detrimental to the upbuilding and betterment of our Merchant Marine, we, nevertheless, feel that if the head of this important branch of the service, the Supervising Inspector General of the United States can coincide with our views expressed in these editorials, co-operating with us for the remodeling of this antiquated code, it is bound to bring forth the desired good results.

What refers to Draft and the Drag, of which sufficient has been said in these editorials, refers likewise to regulations of boiler construction in the United States, com-

pared with the construction of those under the British and German flag. We have no rules for material of rivets, we have no rules for riveting. The rules for material of shells, the shell plate formula and rules for flanging of plates, as well as material for stays and factor of safety do not compare with the rules of the Board of Trade, British Lloyds, Bureau of Veritas and the German Lloyds, on which subject the writer has undertaken to write an editorial for the January issue of Pacific Marine Review.

If we would comply with the rules of boiler constructions laid down by the above-mentioned Board and Associations, or change ours in accordance, it would certainly improve matters in general and be a great help to every ship under the American flag and a saving of continuous expense to such shipowners by eliminating the yearly hydrostatic test, which you well know, and know better than the writer, does not improve boiler conditions.

Since my retirement from a profession in which I have been actively and successfully engaged since 1875, until I met with the unfortunate disaster in the loss of the S. S. "Dakota," I have made it my duty to intrinsically study and compare our navigation laws with those of other nations and learn more every day, to my regret, of the antiquity and inadequacy and general lack of this important code compared with those of other more progressive and expansive trading nations of the world.

Before concluding in these suggestions, I wish to lay particular stress upon the utmost necessity for the establishment of a Marine Court, in charge of a special Admiralty Judge, assisted by nautical and professional assessors, as the case may require, which other nations possess and in which we again so unfortunately fail.

As an ex-shipmaster, I have and I think you are aware, honored and favored throughout my career the profession and standing of our marine engineers, and do so today, in particular those whom I had the pleasure of respecting as my co-workers. Both professions are of such an entirely different nature that each requires years of training, practice and long experience to become efficient in either, for which their respective positions may call them in charge of on or below the deck of a steamship. My views have in this respect been clearly laid down in Pacific Marine Review's September issue, under the heading of "B. C. Admiralty Court Decisions," with editorial comment, and I sincerely trust that the Supervising Inspector General has accepted these views in the spirit they are meant, without the slightest intention of disrespect, on which subject at some later date I again intend to express more extended views.

Trusting that your valuable time will permit your acknowledgment of this letter, I am, my dear Mr. Uhler, sincerely yours,

(Signed) E. FRANCKE.

Department of Commerce and Labor.

Steamboat Inspection Service.

Washington, D. C., December 26, 1911.

Captain E. Francke, Editor Pacific Marine Review,

379 Arcade Annex, Seattle, Washington.

Sir: In the absence of the Supervising Inspector General, I have the honor to acknowledge the receipt of your very interesting letter of the 19th inst., in regard to certain proposed changes in the maritime laws, and in reply, you are advised that your communication will be submitted, with its enclosures, to the Board of Supervising Inspectors for consideration so far as the Board may have jurisdiction. Respectfully,

(Signed) S. N. HOOVER, JR.,  
Acting Supervising Inspector General.

Department of Commerce and Labor.

Steamboat Inspection Service.

Washington, D. C., January 26, 1911.

Pacific Marine Review, 379-380 Arcade Annex,  
Seattle, Wash.

Gentlemen: The Bureau is in receipt of copy of the Pacific Marine Review for the month of January, 1912, and your card of the 20th inst., calling attention to an article contained therein under the heading of "U. S. Hydrostatic Tests and Boiler Construction Compared With Other Nations," and in reply, you are advised that the above referred article has been brought to the attention of the Board of Supervising Inspectors of Steam Vessels, now in session in this city. Respectfully,

(Signed) GEO. UHLER,  
Supervising Inspector General.

Department of Commerce and Labor.

Steamboat Inspection Service.

Rooms of the Board of Supervising Inspectors.

Washington, D. C., February 19, 1912.

Captain E. Francke, Editor Pacific Marine Review,  
379 Arcade Annex, Seattle, Wash.

Sir: Referring further to your letter of December 19, 1912, addressed to the Supervising Inspector General, Steamboat Inspection Service, and by that gentleman referred to the Board of Supervising Inspectors of Steam Vessels now in session in this city, relative to certain proposed changes in the maritime laws, you are advised that the Board has carefully considered your communication, and such changes as the Board thought necessary, within its jurisdiction, have been made, which changes will appear in the new edition of the General Rules and Regulations, provided the changes meet the approval of the Department of Commerce and Labor. Respectfully,

(Signed) JOSEPH J. DUNN,  
Secretary of the Board.

#### AUSTRALIA-NEW ZEALAND CABLE

The Australian House of Representatives has passed a bill introduced by the Postmaster General authorizing the Pacific Cable Board to construct and work, as part of the Pacific cable, a cable between New Zealand and Australia. Australia's sanction practically given by the passage of the measure through the Lower House completes the authorization. The laying of the cable will be undertaken early next year, the work being done by the Pacific Cable Board's own steamer.

#### ENDURANCE OF A DIESEL ENGINE

The British firm which is building two sets of eight-cylinder, four-cycle Diesel engines, of 2,500 combined horsepower for the "Jutlandia," have recently tested a single-cylinder model, which corresponds in every particular with the cylinders which make up each eight-cylinder group. According to the Engineer, this "trial" engine, whose cylinder is 22 inches in diameter by 29¼ stroke, completed a thirty-day continuous night and day, non-stop run, twenty-eight days of which were at full power. We quite agree with our contemporary that "such a run as this should go far to convince the superintending engineer that the Diesel engine has now reached a stage of progress at which it calls for at least his most serious consideration."

Work on the dry dock at the Puget Sound Navy Yard, at Bremerton, is rapidly nearing completion. The work on the dock body, pump well, etc., is about 90% effected. The delivery under the contract for pumping machinery, is expected within two or three weeks.

## PACIFIC COAST CO.'S SPECIFICATIONS FOR NEW STEAMER

**T**HROUGH the courtesy of the above company, we are in possession of the specifications, compiled by G. W. Dickie, N. A. & M. E., of 24 California Street, San Francisco, for the first of the two new vessels to be built for this company and for which bids will be opened on March 27th, 1912. The new steamer is practically an improved duplicate of the "Governor" type, of larger dimensions and in every way of the highest and most suitable class for this company's Coastwise steamship service.

Pacific Marine Review notes with regret that this fine vessel will be a coal burner, which no doubt, and justly so, is due to the Pacific Coast Company's large interests in coal mining properties.

Should the company, however, at a later date decide in favor of the now superbly perfected and unquestionably much more economical oil-burning device from every view point, a change to this system is easily accomplished.

We sincerely trust that one of the Pacific Coast ship-building yards will become the successful bidder, having in their favor, against Eastern firms, the cost of bringing the new vessel from the Atlantic to the Pacific, which is in itself a considerable item.—Ed. Note.

### Dimensions

Length over all .....	440'	6"
Length between perpendiculars .....	424'	8"
Breadth moulded .....	53'	0"
Depth moulded .....	29'	0"
Depth of double bottom center line .....	3'	10"
Depth to main deck about .....	21'	0"
Main deck to upper deck .....	8'	0"
Upper deck to shelter deck .....	9'	6"
Shelter deck to bridge and forecastle deck .....	8'	0"
Bridge and forecastle deck to boat deck .....	8'	0"
Crown of beam in 53 ft. ....	0'	10"
Designed rise of floor .....	2'	6"

### Dead Weight Capacity and Draft

The vessel to have a dead weight capacity of 3,725 tons, consisting of 2,545 tons of cargo, 1,000 tons of coal, 90 tons of passenger and baggage, and 85 tons of stores, on a skin draft of water not exceeding 22' 6" even keel when complete and ready for sea, with steam up and all spare gear on board. This carrying capacity to be determined when preparing the vessel for trial, which will be made with these weights added to the vessel in light condition.

### Class and Surveys

The vessel and fittings to conform to all the requirements of the rules and regulations prescribed by the Board of Supervising Inspectors for Steam Vessels of the United States, and to be constructed under the special survey of the American Bureau of Shipping for the highest class A-1 for twenty years and to be provided with a classification certificate, test certificates for steel material in hull, certificate for anchors, chain cables and wire hawsers.

### General Description

The vessel to be constructed generally of steel, in accordance with the A-1, 17-year rating of the American Bureau of Shipping for vessels with three decks below a poop and forecastle and shelter decks. To have a straight stem, and elliptical stern, a flat keel and double bottom, subdivided by water-tight floors, and a longitudinal water-tight vertical keel plate, fitted complete as water ballast and fresh water tanks. To have two steel pole masts, four main hatches, six side hatches on the main deck and two side hatches in No. 2 hold on lower deck, four coaling ports, twelve side cargo ports and four side passage ports. Four derricks to be fitted to each mast. The two on the side of the foremast to be capable of

handling 15 tons. To have eight steam cargo winches and two steam boat winches.

Accommodations to be provided for a crew of about 150. To have accommodations for about 400 first-class, 100 second-class and about 100 third-class passengers.

Welin davits, electric heating apparatus, steam, electric and refrigerating machinery of all kinds will be installed.

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Propellers to be of maganese bronze.

The electric installation to consist of three direct connected, 110 volt generating sets. Each set to have a capacity at normal load of 50 K. W.. About 850 incandescent lamps will be required.

The Seattle Construction and Dry Dock Co. will launch four of the five whalers now under course of construction the latter part of this month. The fifth whaler will slide down the ways early in April. The new steel passenger steamer, "Sol Duc," building for the Inland Navigation company, will be launched in about two months. The work on the new passenger steamer, "Potlatch," for the same company, is well under way.

The approximate percentages of completion of the U. S. submarine torpedo boats under construction in this yard, are as follows:

"F3" .....	93%
"F4" .....	93%
"H3" .....	52%
"K4" .....	19%

The work on the two submarine torpedo boats being built for the Chilean government is rapidly progressing.

The dredging of the basin for the new 12,000-ton floating dry dock is well under way, and the construction of the pontoons for the dock was commenced during the end of February.

At the stockholders meeting of the Alaska Coast company held on February 9th at Tacoma, Wash., the following trustees and officers were elected:

Trustees: H. F. Alexander, Chester Thorne, William Jones, S. A. Perkins, M. A. Arnold.

Officers: H. F. Alexander, president; Chester Thorne, vice-president; William Jones, treasurer; C. W. Wiley, manager; J. D. Amos, secretary.

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Boilers to be of the Scotch Marine type, to be fitted for natural draft, and to be constructed for a working pressure of 180 pounds. The whole installation to be of the most modern type. Boilers to be constructed especially with a view to accessibility for examination and to be duplicates of those on the company's T. S. S. "Governor." There will be ten single-ended main boilers, having in all thirty Morison Suspension Furnaces.

Propellers to be of maganese bronze.

The electric installation to consist of three direct connected, 110 volt generating sets. Each set to have a capacity at normal load of 50 K. W.. About 850 incandescent lamps will be required.

The Seattle Construction and Dry Dock Co. will launch four of the five whalers now under course of construction the latter part of this month. The fifth whaler will slide down the ways early in April. The new steel passenger steamer, "Sol Duc," building for the Inland Navigation company, will be launched in about two months. The work on the new passenger steamer, "Potlatch," for the same company, is well under way.

The approximate percentages of completion of the U. S. submarine torpedo boats under construction in this yard, are as follows:

'F3'	93%
'F4'	93%
'H3'	52%
'K4'	19%

The work on the two submarine torpedo boats being built for the Chilean government is rapidly progressing.

The dredging of the basin for the new 12,000-ton floating dry dock is well under way, and the construction of the pontoons for the dock was commenced during the end of February.

At the stockholders meeting of the Alaska Coast company held on February 9th at Tacoma, Wash., the following trustees and officers were elected:

Trustees: H. F. Alexander, Chester Thorne, William Jones, S. A. Perkins, M. A. Arnold.

Officers: H. F. Alexander, president; Chester Thorne, vice-president; William Jones, treasurer; C. W. Wiley, manager; J. D. Amos, secretary.

## THE M. S. "SELANDIA" ON TRIAL TRIP

The ocean-going motor ship, "Selandia," built by Messrs. Burmeister and Wain of Copenhagen, completed a most successful trial trip on February 14th, 1912, which is truly a red letter day in the epoch making Diesel engines era for ocean-going motor ships. The "Selandia" is 370 feet long, between perpendiculars, 53 feet beam and of 30 feet moulded depth to upper deck. The gross tonnage is 4,900 tons, net registered 3,200 tons, with a dead weight capacity of 7,400 tons, having a displacement of approximately 9,800 tons. Loaded with about 1,000 tons weight, consisting of oil fuel, galley fuel and fresh water, the vessel made an average of 13.35 knots over the measured mile in Copenhagen Sound. With a full cargo, her speed is estimated to be over 11 knots. Two Burmeister and Wain oil engines, a perfected Diesel type are propelling the vessel, at 1,250 D. H. P. (140 revolutions per minute) each, or about 1,500 I. H. P., the aggregate power on twin shafts is 3,000 I. H. P. The engines are of the 4-stroke type and single acting, and are reported as perfect and handy as could possibly be desired.

The vessel has three pole masts. The mizzen is utilized as an exhaust for the gases of the main and auxiliary engines. These gases, however, pass through water-cooled silencers before entering the mast, which is, therefore, not unduly heated. She is fitted with electric light and with wireless telegraphic apparatus, and nothing has been omitted or spared to make her complete and thoroughly up to date in every detail affecting safety, comfort of passengers, and economy of working. Both the vessel and her machinery have been constructed under the special survey of Lloyd's Register, and will receive the highest class of that society.

The owners of the Selandia are the East Asiatic company of Copenhagen, a progressive shipownery under the Danish flag, the vessels of which are trading to the Straits Settlements, East India and China.

Two sister ships of the "Selandia," the "Flonia" and "Jutlandia," will likely make their trial trips in the near future, comprising this company's present motor fleet. This Danish enterprise is a new realm of shipbuilding, which will be augmented by two more ten thousand ships and six vessels of six thousands tons, all to be propelled by oil engines. Such policy should stir this country to some extent, since oil fuel is produced in such large quantities on our shores. During the trial trip, shipowners, shipbuilders, and engineers who accepted the invitation of the builders, were largely represented by England, Germany, Holland, Norway and Sweden.

Pacific Marine Review extends to the owners and builders of the "Selandia" its congratulations upon the splendid results obtained on this trial trip, which from start to finish was completed without the slightest hitch.

## NEW VESSELS CLASSED BY LLOYD'S REGISTER DURING 1911

During 1911, 670 new vessels of 1,373,399 tons, have been classed by Lloyd's Register. Corresponding with the general movement of the shipbuilding industry the present figures show an increase on those for 1910 of about 316,000 tons. Of these vessels, 603 of 1,356,591 tons are steamers and 67 of 16,808 tons are sailing vessels.

With the exception of 47 small wood vessels of 1,153 tons and 5 iron vessels of 704 tons (including one steamer of 436 tons) the material used in the construction of the whole of the tonnage classed was steel.

The output of sailing tonnage, which formed 25 per cent of the tonnage classed in 1891 and 30 per cent in 1892, and which had since steadily decreased, is somewhat larger for 1911 than for 1910, which latter year recorded the smallest amount of sailing tonnage ever classed in one

single year by the society. The figures for 1911 include two large steel sailing vessels, each of over 3,000 tons, built in Germany. The percentage of sailing tonnage to the total tonnage classed for 1911 is 1.22 as against 0.2 for 1910. For the five years 1905-1909 the yearly average was 0.79 per cent.

A large number of vessels of special design were classed during the year. These comprised 24 steamers built on the longitudinal system of construction, with a total tonnage of 109,113 tons, including 3 for the Great Lakes of America, and one on the topside tanks system; 6 vessels fitted for burning liquid fuel; 5 steamers of the cantilever framing and topside tanks type; 1 steamer, "Shinyo Maru," fitted with steam turbines; 2 steamers, "Orama" and "Demosthenes," with a combination of turbines and reciprocating engines, and the S. S. "Holzapfel I," fitted with engines worked from a suction gas plant and with screw shaft connected by a hydraulic transformer; together with other steamers intended for channel and coasting purposes and numerous vessels of various special types, such as motor yachts, yachts, dredges, river steamers and barges, tugs, fishing vessels and ferry boats.

The average size of the steamers classed during the past year is about 2,250 tons. Excluding vessels under 500 tons, in order to avoid the diminution caused by small coasting vessels, fishing vessels, yachts, etc., the comparative averages for the past few years stand as follows:

	1911	1910	1909
Steam .....	3,723	3,341	3,007

During 1911, 26 steamers of over 7,000 tons each have been classed, as compared with 28 in 1910, and 17 in 1909. Three of the steamers classed during 1911 were over 13,000 tons each, namely the "Franconia," the "Laconia" and the "Shinyo Maru."

Of the tonnage classed during the year 1,132,969 tons, or about 82½ per cent, have been built in the United Kingdom. Among foreign countries, Germany contributed the largest amount of tonnage (76,239 tons), then follow the United States (45,473 tons), Holland (35,399 tons), Japan (22,596 tons), France (21,597 tons), and Austria-Hungary (15,435 tons).

This return includes a statement showing the countries for which the tonnage that has been classed was built. The tonnage built for the United Kingdom was 898,722 tons, and 474,677 tons for other countries. Among the latter Germany leads with 103,641 tons; then follow: Austria-Hungary, with 67,512 tons; Holland, 49,443 tons; the United States, 47,344 tons; Japan, 42,410 tons; British Colonies, 28,479 tons, and France, 24,253 tons.

W. R. Grace & Co., New York, owners of the Merchants Line, from New York to Chile, Peru and Ecuador, have closed a contract with the William Cramp & Sons Ship and Engine Building Co., Philadelphia, for a 10,000-ton steamer which will be the first vessel belonging to that firm to have an American register. The new vessel will be over 400 ft. long and will have passenger accommodation, and so constructed that she can burn coal or fuel oil. The new craft will be ready for delivery in eleven months, and will engage in the coastwise trade between the Pacific and Atlantic coasts upon the opening of the Panama Canal.

The new Canadian Pacific Railway steamer, Princess Sophia, built by Messrs. Bow, McLachlan & Co., Paisley, England, recently completed her trials, which were most satisfactory, a speed of 14 knots being easily attained, which is in excess of contract requirements. The Princess Sophia is a single-screw steamer, 245 ft., by 44 ft., by 18 ft., with triple-expansion engines, and has been specially designed for services on the Pacific Coast. The steamer is fully appointed in every respect as a first-class passenger steamer, with accommodation for about 200 passengers.

## SHIPPING AND ALLIED FINANCE

By H. B. JAYNE

THE following comprehensive financial shipping review, dated at London, 23rd of February, has been forwarded to this office by Mr. Jayne and will no doubt prove of interest and value to all concerned.—Ed. Note.

"The most important recent event in shipping finance has been the purchase of the Union Castle Line, in service between the United Kingdom and South Africa, jointly by the Royal Mail Steam Packet Co., which about a year ago acquired the Pacific Steam Navigation Co., both companies being well known and dominating the South American trades and West coast trades south of Panama, and by Elder Dempster & Co., Ltd., at the extraordinary price, at least in my judgment, an extraordinary price, of £32/10s per share, per £10 share, which shares in the early part of last year were quoted at £11.

I have a great regard for the Royal Mail Steam Packet Co. and for its physical administration, but I venture to predict that if its principal directors, Sir Owen Phillips and Lord Pirrie, continue their present scale of grand finance, and amalgamation of shipping properties, which are not proper subjects for grand finance, and "bubble appreciation," being more associated with rapid depreciation, as demonstrated by the International Mercantile Marine Co., and the meteoric career and destruction of several previously sound domestic steamship companies in New York, attempted by Morse, of "Ice King," and subsequently more unpleasant fame, I predict that it will not be many years before we shall witness a collapse and financial reconstruction of the Royal Mail Steam Packet Co., and its subsidiaries.

The extraordinary circumstances which have governed and advanced the freight market during the last twelve months, to wit an abundant cotton crop in the United States, grain movements from the Argentine, the earlier stringency in the freight market caused by international complications, between Germany, France and England, and rumors of war and the subsequent actual minor war between Italy and Turkey, as well as many other obvious and temporary causes, do not necessarily indicate permanent extraordinary demand for tonnage, whereas there is every universal indication of permanence in the advanced cost of wages, insurance, coal, etc., and in every detail of operation.

I know that many in London will criticise me for my daring to disagree with such publicly accepted shipping experts as Lord Pirrie, so well known throughout the shipbuilding world, as the head of those great and successful shipbuilders, Messrs. Harland & Wolff, of Belfast, builders to the White Star Steamship Co., and with Sir Owen Phillips, who has more recently been brought into public notice, in connection with these and previous steamship amalgamations.

In April, 1910, Lord Pirrie and Sir Owen Phillips, respectively chairman of the Royal Mail Steam Packet Co., and chairman of Harland & Wolff, Ltd., formed Elder Dempster & Co., Ltd., to acquire from the executors of the late Sir Alfred Jones, the assets and business of Elder Dempster & Co., for which the new company paid £500,000 subject to the liabilities.

The prospectus contains the following statement: "In making the purchase Lord Pirrie and Sir Owen Phillips did not employ professional valuers, but they have made a careful estimate of the value of the assets, and are of the opinion that the net value thereof exceeds the purchase price by the sum of £400,000 at the least."

This is interesting inasmuch as Lord Pirrie and Sir

Owen Phillips, in connection with the purchase of the Union Castle Line, at £32 per share, which obviously requires special explanation, point with pardonable pride to the justification of this valuation in the case of Elder Dempster & Co., and now add:

"Speaking now with a thorough knowledge of the assets derived from managing the company's affairs for nearly two years, they consider that their estimate was conservative, and that since that time the value of the assets has materially appreciated."

On the other hand I should like to ask Mr. Owen, Harrison Williams, banker of Liverpool, and sole executor of the late Sir Alfred Jones, whether he did not receive an offer from the Cambrian Navigation Collieries Co., Ltd., of Cardiff, South Wales, the principal controlling factor in the South Wales coal trade, and now so much before the public, in connection with the threatened national coal strike, and/or from those connected therewith, to purchase for £600,000, accompanied by a substantial deposit in proof of bona fides, and if so why in capacity of executor, he did not set one offer against the other, in which case I am creditably informed, a purchase price of £800,000 might have been realized.

I courteously but definitely ask Mr. Harrison to answer me upon this point, aware that this publication circulates in many important steamship and marine insurance offices in London and Liverpool, and also appreciating that this point is of special interest to the beneficiaries in the estate of Sir Alfred Jones, deceased, and also concerns the reputation of his executor.

That the valuation put upon the business of the Union Castle Line by the Royal Mail Steam Packet Co., will be equally successful I venture to doubt and time only can reveal.

In my judgment a few years of acute depression, for which we have ample precedent in the shipping business, would place these unwieldy combinations in a serious position, and would sweep away their small reserves. Much is expected of the Panama Canal, but in my judgment there is a great disposition to over estimate and exaggerate its immediate and beneficial effects. I anticipate a sharp decline in freights and obviously as it will shorten many of the great commercial routes it will take a smaller number of vessels to cover present commercial movements and those therein now engaged, when diverted to the shorter route, can perform a higher percentage of service.

Messrs. Elder Dempster & Co., Ltd., and the Royal Mail Steam Packet Co., Ltd., have recently made two large debenture issues respectively £1,000,000, 5% @ 94 and £400,000 4½ at par, and £850,000 5% (practically a second mortgage debenture stock), at 99% to complete the Union Castle purchase, none of which issues have been well received either in London or Paris.

The former managers of the Union Castle Line, Messrs. Donald Currie & Co., receive £700,000 for retiring in favor of the new combination.

In other finance of direct or indirect interest to the steamship and allied interests on the Pacific Coast may be noted the recent issue by the City of Tokio of a 5% £9,175,000, the biggest municipal issue on record, for the purchase of electric tram-ways and electric lighting undertakings from the Tokio Railway Company. Four million pounds was issued in Paris at 98¾ (the expenses of issue and taxation being highest in Paris), where it was a great success; £3,175,000 in London at 98 where it was not so well received, 50 per cent falling on underwriters and £2,000,000 in New York at 97½.

The comparative success of this loan is instructive as demonstrating that recent allegations and published statements both in Japan and foreign countries concerning Japanese national credit and the national policy of economy and retrenchment, as well as possible adverse influences issuing from present progress and reform in China, have not, as yet, alarmed the great financial centers. A yield of £5.2.0%, the London price, is perhaps high for a first-class capital city, but on the other hand, as I have frequently reported, national or other equally well-secured loans have long since ceased to attract public attention unless they yield 5%; a good example was recently given in a large West Australian 3¼% loan at 99, all of which practically fell on underwriters. Another example and of more specific interest to the Pacific Coast, is a loan by the Canadian Northern Railway of £7,000,000 3½% at 93, guaranteed by the Dominion of Canada, which was somewhat unwisely issued on a "bad market" and fell 90% on underwriters, and has congested the Canadian market accordingly.

Another illustration of the state of the market for gilt-edged securities is afforded by the case of the Canadian loan, £5,000,000, 3½ per cent@98, issued February 25, to replace securities shortly maturing, and which caused a fall of 2 points in the price of the existing stock of a similar kind.

Allowing for bonus contained in the first interest payment and for redemption the yield is £3.13.0 per cent; the general public, driven by the universal increased cost of living and advanced standards of comfort, have long ceased to be tempted by these low yielding issues which are principally taken by insurance and trust companies on a "firm underwriting" basis.

The general market is also commencing to think that Canada and Canadians have borrowed sufficient money, at least on such low terms compared with South American and other foreign countries, and there is a disposition to raise rates in forthcoming Canadian issues, the underwriting of which has become more difficult.

Among other matters of interest to you may be noted the disappointment with which London and Paris has received the reduced dividend of the Chicago, Milwaukee and St. Paul, and the Chicago, Milwaukee and Puget Sound Railway, and the disposition, particularly in Paris, to be cautious in regard to further bond issues; I should not be surprised if there is a policy of general retrenchment and economy throughout both systems, which will be felt in your district, as it is money which makes railroads and steamships as well as "mares move."

In a recent communication from R. P. Schwerin, vice-president of the Pacific Mail Steamship Co., in connection with other subjects, he reports that he "shares my amusement at the statement that Lord Pirrie was buying in the Pacific Mail, and that all statements in regard to the sale of the Pacific Mail have been without foundation."

"That company is pegging away, giving a better service and carrying more freight at lower rates than ever before, and trying to meet the somewhat unreasonable demand of the traveling public to give a 'champagne' service for an 'Eighth Avenue' price."

Lastly I note the revival of the somewhat ambitious scheme, to which I have so often referred during the past two years, to place a 24-knot steamship service, with steamers of the "Mauretania" type between Liverpool and Halifax, at a cost of £6,000,000, and for which it is stated the Canadian government is prepared to pay a subsidy of £800,000 per annum, provided that the vessels can be converted into auxiliary cruisers. It is stated that the Canadian Pacific, the Canadian Northern and the Grand Trunk Pacific railways are prepared to unite upon such a service. I prefer to express no opinion at present."

## T. W. TAMPLIN & CO.'S SHIPPING REVIEW

MESSRS. T. W. TAMPLIN & CO., Steamship brokers, 83 Gracechurch street, London, E. C., England, send us the following report regarding shipping in general during the past year:

"It is satisfactory to be able to report that the improvement in freights, which commenced about the middle of 1910, has (with one or two slight relapses) not only continued, but during 1911 a further and considerable improvement took place. Shipowners therefore commence the year 1912 not only in a hopeful spirit as regards the immediate future, but with the hope that for the next two years at least they will get a fair return on their investments. Considering the nine lean years that tramp steamer owners have had to put up with, it seems to us that no class of trader is better entitled to at least such a period of prosperity.

"That until the latter part of last year there was ample room for an improvement is shown very clearly by the statistics published by "Fairplay" in December last. Despite the rise in freights, out of 37 limited liability companies owning tramp steamers only 16 wrote off proper depreciation, and the dividends paid by these companies show an average of only 3¼ per cent.

"The output of new tonnage during 1911, according to the returns given by Lloyd's Register, showed an increase against the previous year of 692,287 gross tons. The total amount launched in the United Kingdom and abroad during 1911 was 2,650,140 gross tons; the tonnage removed from the Register during the same period was 863,000 gross tons; there was, therefore, a total increase in the world's merchant tonnage of 1,787,140 gross tons.

"During the latter part of last year a considerable number of orders were placed with the shipbuilders, and, consequently, on the 31st December there was more tonnage under construction than on the corresponding date twelve months previously.

"Tonnage under construction in the United Kingdom 31st December, 1911, 1,519,052 gross tons; 1910, 1,131,503 gross tons; an increase of 387,549 gross tons.

"If one takes into account the rise in the price of steel and the increase in wages, the prices paid to builders up to September last year for new tonnage were only moderate, and we fear will leave builders with a bare margin of profit. Since then builders have, however, been much firmer, and have only taken contracts at higher figures. The rise in the price of new cargo boats during the twelve months ending 31st December last may be stated as fully 12½ per cent.

"The shipbuilders are not only very busy, but, generally speaking, are booked well ahead, and it is the exception to find a builder who can promise delivery of a fairly large steamer this year.

"During the year under review there was an active demand for second-hand steamers; not only the fairly modern boats, but a large number of older steamers were sold at prices which showed an increase of fully 20 per cent on what could have been obtained for them twelve months previously.

"A large number of British-owned sailing vessels were disposed of to foreigners (principally Scandinavians) during the year, mostly at low prices; with the excellent freights since obtained, the new owners should reap very handsome returns. The great improvement in freights has hardened prices considerably, and there is not much sailing ship tonnage offering for sale."

## THE BUSINESS AND FINANCIAL OUTLOOK

**T**HROUGH the courtesy of the Fourth National Bank of New York, the Pacific Marine Review has arranged to publish from now onward their monthly letter under the above heading.—Ed. Note.

New York, March 1, 1912.

"Through the usual February decline in bank surplus the New York clearing house institutions, including the operations of the trust companies, lost last month \$20,564,000 in excess reserves. This has led naturally to a somewhat stronger tone to money rates, although the borrowing demand is still much below what is generally seen at the opening of March. Some important bond operations will be financed during the month and payments in connection with these, together with the usual outlays that have to be arranged for at the opening of the spring season, are likely to lead to a broader demand for money. The banks, however, are well equipped to meet these disbursements, although it must be remembered that the surplus is rather unequally distributed among the banks so that the average reserve holdings of most of the clearing house institutions is not abnormally heavy.

"The uncertainties of a presidential year are holding back business in some quarters, especially in a few of the large cities. Such unsettlement is usually encountered about this time, but as yet it has had little influence upon the volume of retail trade. The country as a whole is doing a fairly profitable business, and, in spite of much that has been said to the contrary, the volume of orders that is now being received by some of the large wholesale houses is very gratifying. More than this it seems clear that the business is being done on an exceptionally safe basis with less risk than is ordinarily encountered. People are not spending as much money for luxuries as they formerly did, and the disposition of most classes is to go slow and not to assume undue risks at this time.

"Both the banks and the trust companies have been investing heavily of late in bonds and short term notes. The reason for these investments has been the disparity existing between the income return from bonds and notes as against the relatively unprofitable rates bid for call and time money. The demand for corporation notes has now reached a state where the buying is probably broader than it has been at this season for many years past. Some of the trust companies have been forced to reduce interest allowances to depositors, owing to the inability of these institutions to pay the relatively high rates formerly allowed on checking accounts and come out more than even after setting aside the cash reserve required by law. This movement is likely to become general, extending to other cities than New York, should the period of exceptionally low rates for call money and short term loans be materially prolonged. The situation in this respect is different from what it was during the easy money market of 1904, for since then the cash reserve system has been so strengthened that banking institutions pretty much all over the United States are required to carry heavier cash accumulations than they were eight years ago.

"Offerings of new securities during February reached the record figures of \$240,000,000, showing a gain of about \$24,000,000 over the flotations of that month in 1911. According to the compilations made by the Journal of Commerce the new financing reported during the first two months of the year reached nearly \$581,000,000, or virtually \$140,000,000 above the total reported during the same months of last year. One significant feature of the showing has been the extraordinary increase in the output of the short term notes, the offerings of which during February alone exceeded last year's total by more than \$35.-

000,000. This is still the form of security which is most popular with investors, especially with institutions, and the movement brings up some interesting questions concerning the refunding operations of next year, when, with the one year loans lately brought out, something like \$300,000,000 in short term obligations will have to be paid off, extended or refunded. Inasmuch as the tendency always is to anticipate the maturity of such obligations or to arrange in advance for their retirement, it seems clear that the new financing called for by the taking up of this vast volume of short term loans will play an important part in the money market situation next fall. Because of our extensive credit balances abroad, this market is in an especially strong position with respect to providing for whatever demand develops them. In addition to the very heavy sums due us through the favorable movement of our foreign trade as represented by the high excess of exports over imports, it would be possible for our bankers to draw heavily against the foreign credit balances represented by the fresh advances recently made on the other side.

"A great deal of interest attaches to the outcome of the suit brought at Pittsburg to test the right of the Pittsburg Clearing House Association to enforce rules relative to the collection of checks, notes, drafts, bill of exchange and other matters. This suit is based, among other things, on the claims that the action of the clearing house would interfere with private business; that it violates the anti-trust law, and that it is in other respects contrary to the purposes for which a clearing house association is formed. This litigation is of the utmost importance to bankers throughout the United States, since it brings before the courts the validity of the clearing house organization, the right of such associations to employ independent examiners, and the legality of the well-formulated system of supervision as practised by the associated banks in the large cities of this country. In answer to the allegations of the complaint it is urged that it has never been the aim of the associated banks of Pittsburg to adopt oppressive measures at all, or to take action which would disturb individual control or which would interfere with the business of any single institution. It is urged also that the movement proposed is decidedly in the interest of sound banking management and with the idea of reducing operating expenses, and that it represents a protective measure which applies to all banks alike.

"If these suits are pressed the whole question of clearing house supervision will finally be passed upon by the Supreme Court of the United States. It is not too much to say that upon the decision of the courts in these cases depends to a large measure the successful management and the safe conduct of the banking business in the United States. The panic of 1907, as in the case of every previous disturbance of the kind, disclosed plainly the weak points of our banking system, especially with reference to such supervision as would render impossible the operations of reckless promoters and dishonest bank managers. The losses incurred through unfortunate operations by various banks a few years ago were, in large measure, due to the fact that bank supervision was a divided affair and that the associated banks had not up to that time taken any sufficient action towards rendering it impossible for unscrupulous insiders to wreck their institutions through loading them up with unsafe loans. Within the last five years the bankers of all the leading cities have come to recognize this defect in their system and it is natural that they should go to considerable pains and expense to remedy the evils which they know to exist."



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## U. S. MARITIME LAW AS IT RELATES TO THE NAVIGATOR

**I**N THE research of contemporary color or atmosphere, we must seek among the impressions which can be obtained only from those who have lived a life amid particular surroundings, which they breathe and which colors them—dies them in the wool.

It is no more than truth to say that in all essential details, the type of vessel now almost wholly extinct was thoroughly familiar to the men of a hundred or more years ago and my purpose of this article is to elucidate the difference then and now, also what we have omitted to do to elevate a profession which always must and will more so in the future, take a most prominent part in every trading nation's success, as in the past, along with those who have excelled us in many respects.

The traditions of the sail period still linger, with which the marling spike seaman is so closely connected, an expressive phrase derived from his chief tool, characterizing the whole professional equipment of the then "mechanic of the sea," of which many proudly bore the title A. B. before they ever aspired to attain a position in connection with the responsibility of being in charge of a watch on the quarter deck.

The men of these bygone days, given the necessary, as it were, spun yarns and the spars shaped by a carpenter, could undertake to equip a bare hull following a launching without assistance, fit her rigging, bend her sails, stow her holes and present her all a-taunt-o to the man who was to sail her. The navigation of a ship thus equipped was a field of seamanship, apart from that of the marling spike, but the men who sailed her to all parts of the globe were expected to be able to do all the preliminary work themselves, often did do it and considered it quite as truly a part of their business as the handling of the vessel at sea. Practice was kept alive by tradition, derived from the days not yet wholly passed away, when he might and often did have to refit his vessel in scenes far distant from any help other than his own and without any resources save those which his ready wit could adopt from materials meant for quite different uses. The navigator of those days was somewhat of a shipwright, a rigger, a sail maker and a stevedore, as good as you may have found ashore employed professionally. However, in this, our epoch-making period, matters have amazingly changed and it must be acknowledged that no science has made more stupendous strides than naval architecture. Floating costly wonders have been called into

successful existence by this admiring profession due to the demand of modern progress and economical operation in large fleets of such vessels as a whole. However, the individual safety of the leviathan of today is entrusted as it was of yore, with the smaller and slower vessel, to the care of one man—the commander.

Thus, responsibility has increased a thousand-fold. It is true, instruments of perfect decision and much greater capability, have been created for practical use. It will, however, be wrong to infer that thereby the duties of a navigator have been rendered less arduous or that he is in any degree being "coddled" or fed with a spoon; on the contrary the claim upon energy and endurance, upon vigilance and nerve, are indeed greater than ever, notwithstanding these refined appliances, the outcome of the skill of modern mechanicians, which were, perforce, called into existence by the exigencies of rapid transit's constant upward march and its steady increase. Without these appliances, and the right kind of men to use them, speed, which costs so enormously, would in a measure be thrown away, vessels of present sizes, with the apparent prospect of further increase and the natural, large cost of operation, cannot afford to be conducted at sixes and sevens, nor can they be permitted to wander at large over the ocean a la Columbus. To do so would interfere in every way with desired results, the gilt on the gingerbread perhaps permitting a less speedy though more skillful rival to slip in first. Just fancy the discomfiture of the one, the jubilation of the other and how the engineer of a high-speed vessel would swear! The atmosphere of the mess room would be perfectly blue with parliamentary language, for no amount of "cracking on" or "firing up" would compensate for bad courses, eventually resulting in having "to skirmish round" for one's port in thick weather; it would simply be miscredited energy of an expensive kind.

Hence, this great need in our highly pitched competitive times for sound professional knowledge which will keep a vessel's stem pointing straight ahead on its great circle course, or coast course for that matter, for the destination during every single minute of night and day. Owners alive to this fact, are becoming more and more particular in selecting men for command who are in possession of capability and efficiency in the truest sense of the terms.

It is the same ashore, there are drivers of freight trains and drivers of express trains. However, in comparison with the railroad profession, the execution of travel is on a firmly and solid laid track, on which these monstrous engines with their precious cars of human freight and mail attached are guided on their way. The latter drivers are considered the best men, are entitled to the best pay and they deservingly receive it.

It is only natural that in this progressive age, social advancement is essential and what in bygone days could appreciatively pass under the "rule of thumb," "rough and ready principle," or it is "near enough for a collier," is in direct controversy to new doctrines. Thus, under convictions slowly recasting, remodelling in our country is needed in many ways. For this reason, we are confronted with two important questions, first: Are we training the merchant sailor according to old doctrines? Second, how are we training the future officers for the profession in regards to seamen's art, the executive abilities necessary to successfully operate these ships and the indispensable discipline, so essential on board of every vessel and more so for those requiring large crews.

The first question is easily answered with "No," because the class of vessel partially requiring in our days the old training is, in this country, so to say, extinct, in

consequence thereof it would be useless to go into further details.

The answer to the second question, however, demands study and comparison with other nations, in which the square rigged sailing ships still exist, though comparatively only in limited numbers. The emblem of the time honored marling spike A. B., now schooled between the handle bars of a truck, skilled in paint washing, scouring brass work and keeping look out is unquestionably inferior, of which the more fitted class acquire the rank of quartermaster to steer the vessel in a comfortable wheel or so termed pilot house, during which time it is compulsory for all to become members of union labor organizations, which compel them to live up to rules set by their so-called representatives, the agitators ashore, whom they support with monthly contributions to continue the so forced on membership.

This refers in particular to the Pacific Coast. Notwithstanding these facts, however, some good has been created by these unions for the betterment of housing crews on shipboard as well as in some other directions to elevate their social standing. How deeply routed the obligations to former associations are in the young officer who, through his good conduct and with the necessary ambition, is elevated to this rank is startling and while it must work not only detrimental in the first years of his service as an officer to essential discipline on shipboard, it often hangs on, as it were, throughout his life's career as a shipmaster, not only degrading to his standing in the eyes of the subordinates on shipboard in particular, but detrimental to his superiors ashore and in consequence to a service in general, which is proven by the fact set forth in this article as an example.

We must admit some exceptional good material, in relation to virtues of faithfulness, conscientiousness and in many ways efficiency, has been recruited from such training for certain type of vessels, while other qualities of just as much importance are sadly lacking.

Executive ability with the essentiality of discipline so intimately related to the attainments of higher education can in this progressive era not be obtained and maintained in any service with satisfactory results without the change of antiquated doctrines.

A few years ago, entrusted with the responsibility as an assistant to the operating department of a steamship company on this Coast, I visited a coastwise vessel of this fleet.

During the time of discharging the cargo, in my urgent desire to interview its otherwise successful master, whom I positively knew was on board, I made numerous inquiries for him, but all in vain. To my amazement and personal disgust, I made the discovery of eventually finding the commander of a fairly good sized and somewhat modern passenger and freight steamer strenuously employed, enjoying a game of poker with his subordinates in the room of one of the officers of his vessel, creating a decided defeat of expectation and a bitter disappointment!

Such conditions I attribute to the general lack of fundamental principles in education for a sphere, for which our navigation laws are primarily to blame and to which this article is in particular devoted.

An act for the establishment of marine schools ashore, consisting of two distinct parts, the one for nautical purposes, to promote the education of the craft, the other for engineering purposes to promote and elevate the faculty of marine engineering with governmental aid, free of charge to all, who have given sufficient evidence of necessary practical training, should be encouraged on well defined lines.

The school should be put in charge of technical and

practical trained merchant marine men, not appointed by political pull, but by a special naval board, the duty of which would principally consist in putting these men first through a thorough examination in regards to their capacity and efficiency before they are permitted to aspire to such responsible position to train others for these respective professions, then after successfully passing the examination appoint those who attained the highest degrees of efficiency.

Nobody wonders whence came the skilled men in Germany in the last few decades who have created the splendid fleet and those who command and officer the vessels sailing under the flag of this country. A thorough and practical system of technical education is largely responsible for the success Germany has attained in this direction. Likewise, Holland, Belgium and all Scandinavian countries have these schools established in their principal cities of the coast. There are a dozen ships in the former country for training sailors and officers for the merchant marine, as well as for the imperial navy. Every young officer on board a German steamer has been educated for his profession as thoroughly as a doctor, a lawyer or an electrical engineer. The naval reserve of foreign countries is the back bone of their respective navies, which could not possibly find more competent navigating material than the officers of their merchant marine, in whom the discipline and association during their time of repeated naval service, transplants naval inspiration under the flag of the merchant marine and commercially throughout.

The pick of material of the profession under foreign flags is in the services of the Cunard, the White Star, the Nord Deutscher Lloyd, the Hamburg-American line, the Generale Trans-Atlantique and many other steamship companies which services recruit cadets or apprentices from their own school ships, in both deck and engine departments, who become a credit in their respective spheres to the company's noble vessels, on which they serve in responsible positions now and will in time to come. Is it thus surprising that we are lacking in what we must admit superior material? We often sneer at the United States navy, but don't let us forget that the American navy has a much harder task to perform in training crews than foreign navies have, for we have no merchant marine from which to draw, which other nations possess. I vividly recollect the remark of a native of the state of Maine, who has long since retired, commanding a Trans-Atlantic liner some seventeen years ago, when reprimanding a junior officer, after the exercise of boat and fire drill for some breach of etiquette during this manoeuvre: "I wish you thoroughly to understand that although we are not the United States navy, you must remember we endeavor to conduct ourselves next to it." This is what the spirit ought to be!

That the American sailor is almost extinct and that the American born captain of the merchant marine can almost be counted on the fingers of one's hands is naturally due to other reasons, so well known and so frequently discussed. Great credit is due to the states of New York, Massachusetts and Pennsylvania, with their school ships, through which the foundation of excellent timber is laid to build upon. Splendid results have been achieved in producing the desired type of men, who are today limited but employed successfully in responsible positions in this profession, for which our country at large has done so little.

With such defined outlines, it is of particular interest to see whether we have kept pace with the time and bettered conditions, first, from the examination point of view.

The two principal so-called licenses I undertake to discuss in this article are the coastwise and the so-termed deep water license for masters, of which naturally the latter should be the superior of the two and consequently more difficult to obtain.

According to our present system, we compute not only the Bering sea, but also from our shores, the Hawaiian Island trade, under the category of coastwise trade. How sublimely ridiculous, such ruling does appear when we stop to consider that on either voyage the ship is hundreds, nay, a thousand miles off the coast! The master who can navigate his vessel from any coast port to Unimak Pass or the Hawaiian Islands should certainly be capable of navigating his vessel around the globe. Why then encourage coastwise examinations when the other requires more study and perfection?

Furthermore, compare the coasting on the Atlantic with such on the Pacific. The east coast is convex, or extending out, enabling the navigator to follow the coast line, shaping his courses from point to point or light to light, without losing distance or time. The west coast is concave, hollow curved and after leaving certain points, the vessel is practically in the open for the larger part of the distance, for instance, between Seattle and San Francisco. Thus again, why encourage and so extensively permit coastwise certificates? It is a one-sided tactic and does not contribute towards elevating a profession which is in need of exaltation from many view points. In the intrinsic study of our existing rules for qualification to obtain a certificate of competency (license) I ask why should a sailing ship of less or more than 700 tons gross be permitted to navigate without a licensed mate? Is it not endangering life and property upon the high seas and upon our coasts? It is only about nine years ago when it became compulsory for mates of sailing vessels of 700 tons gross and upward to hold a license. The result was that unlicensed men stepped out to make room for the licensed navigator, removing from our sea boards an almost unpardonable menace to life and property. A later ruling, however, provides that only those sailing vessels carrying passengers shall be required to carry a licensed mate. What an absurdity? How many of our fore and aft schooners carry passengers?

Are there any which do, with the exception of the master as part owner, who may carry his wife? Who made such flimsy rulings? It must be apparent to any observer that this latter change, to express it mildly, borders on ignorance of the worst kind. Does it not permit the less scrupulous owner or master to employ the cheaper unlicensed handy-man, thereby jeopardizing to no small extent the safety of crew and tonnage afloat, not mentioning the danger to passenger ships and other vessels which these half officered crafts frequently meet at sea and on our coast. Is this ruling not a direct violation of the International Rules of the Road? Can the latter rule, itself a safeguard, be properly obeyed and carried out by irresponsible men?

Every vessel under way, whether steam or sail, large enough to puncture the hull of another vessel through improper handling, navigating waters frequented by other vessels should at all times be in charge of and handled by a duly licensed officer. How can we under such dangerous rulings expect our underwriters to lower insurance rates?

A further advance should be made in thoroughly stipulating defined rules and named problems, which are expected and required to be worked out by each qualified candidate for examination, to be of a definite kind and amount suitable to the respective grade of license, so that each and all aspiring for an examination may thoroughly prepare themselves along such defined lines, instead

of having a taste of almost everything and no real sound knowledge of anything before and after passing for second mate or mate.

What must we think of a licensed mate who has never seen an azimuth mirror and is incapable of using this important and in our days absolutely indispensable instrument? What of a man with a second mate license who takes the Venus for the Pole Star? What of a steamship officer who does not know how to work a bearing of moon or star? How in the world did such men obtain their certificates? For all these and previous questions I crave the gracious forbearance of the critic to answer. Is this not sufficiently convincing that something is wrong somewhere, radically and methodically wrong, but our marine laws never flinch they have been inefficient so long that it almost appears the spirit to let them remain stagnant, although the very face of ocean commerce is changing due to America's ingenuity and enterprise in the completion of the latest world wonder, "the Panama Canal of the World."

But we must remember that as long as the spirit of such stagnancy continues to exist, we will continue to remain among the big nations somewhat of a laughing stock as the smallest maritime nation, with more facilities and probabilities than any one, as far as coast line and trade in general is concerned. It is indeed depressing and humiliating to compare the maritime law of other nations with our own and I refrain in this instance from using more space for comparative purposes, which is degrading for us in the eyes of others.

In relation to defined rules and named problems, I would suggest that if the entire revision of the code is not undertaken, which is by many considered such an enormous task, but which it is not in reality, to at least insert amendments to read, for example, as follows:

"A thorough verbal examination is to be passed in relation to practical seamanship for all grades stipulated, including the Rules of the Road, knowledge of Maritime Laws, etc."

With reference to nautical examination for ocean service:  
For Mates—

1. Multiplication by Common Logs.
2. Division by Common Logs.
3. Day's Work.
4. Latitude by Meridian Altitude of the Sun.
5. Parallel Sailing.
6. Mercator's Sailing.
7. Time of high water.
8. Amplitude.
9. Time Azimuth.
10. Longitude by Chronometer and Altitude Azimuth.
11. Time of Star's Meridian Passage.
12. To find names of stars from Nautical Almanac within a given distance of the Meridian at a certain time, and also the distance they pass north or south of the Zenith.
13. Compute the obs. Alt. of a star for a given place.
14. Latitude by Meridian Altitude of a star.
15. Star Time Azimuth.
16. Latitude by reduction to the Meridian.
17. Latitude by Pole star.
18. Latitude by moon's Meridian Altitude.
19. Correction for soundings.
20. Magnetism.

For Masters—

The same as for mates in the entirety with the addition of:

1. Sumner method.
2. Compass Syllabus.
3. Compass adjustment.
4. Latitude by Double Altitude.
5. Position of ship by Double Chronometer Problem.

6. Great Circle Problem.
7. Error of Chronometer by altitude of sun or that of other heavenly bodies.
8. Extra chart problems.
9. Questions on modern shipbuilding.
10. Subject of stability.

The above would favorably compare with the knowledge one must possess to obtain either grade under foreign flag, which however, is still excelled for instance by Germany and Holland. Great Britain requires plane and spherical trigonometry for the extra master's examination only. The above two countries mentioned make this inclusion compulsory not only for the master but from and including the second mate's examination, in addition to the above qualifications, some knowledge of modern marine engineering and medicine in general is required.

It is only too true that the law must be behind the advance guard of progress in general to work out necessary changes, if not in time the entire revision, but it is generally known that our navigation laws are utterly obsolete and in many cases unworkable, since generations past. In the introductory part of this article, I have spoken of periods of fifty and one hundred years ago, but let us admit the fact that some parts of our maritime code date back as far as 1789 and 1814 respectively, notwithstanding the progress other maritime nations have made in this and other respects. Would it not conclusively appear that those entrusted with the innovation and essential elevation of maritime affairs in our country are still under the spell of Orpheus, the mystic trachian poet, reputed to have entranced inanimate objects by the music of his lyre?

E. F.

#### RAPID CANADIAN DEVELOPMENT

At the recent annual meeting of the Canadian Bank of Commerce it appeared that the net profits for the year ended November 30, 1911, were \$2,305,410, amounting to 21.76 per cent on the capital employed. The president in his speech said:

"Canada is preparing for the settlement in one year of 400,000 immigrants, to provide for whom in everything from transportation to housing is a huge task. The import returns for 1911 show settlers' effects at only \$14,000,000, doubtless far below the actual value, but the main part of the settlers' property consists of money. The estimated wealth of the new settlers for 1911, based on the lowest experience of several years, is about \$160,000,000. The clearing-house returns from twenty cities for 1911 were \$7,336,866,000, against \$6,153,701,000 for seventeen cities in 1910, a gain of 19 per cent; the gain between 1909 and 1910 being 18 per cent. The building permits of the chief cities again illustrate the rate of growth in Canada:

	1910	1911
Montreal .....	\$15,713,000	\$14,580,000
Toronto .....	21,127,000	24,374,000
Winnipeg .....	15,106,000	17,550,000
Vancouver .....	13,150,000	17,652,000

"Proposals for municipal expenditures are on a scale never attempted before."

Canadian municipalities have been heavy borrowers in the London market from January, 1905, to date, as the following statement shows: Winnipeg, \$18,140,570; Montreal, \$12,282,073; Vancouver, \$9,581,652; Calgary, \$4,866,281; Edmonton, \$5,373,102; Maisonneuve, \$4,277,654; Westmount, \$2,433,250; Victoria, \$2,851,394; Toronto, \$1,917,877, and other towns making a total of \$76,174,035.

#### THE CHINESE REVOLUTION AND COMMERCE

The most remarkable features of the revolution in China have been accomplished with a comparatively small disturbance of the finances of the Far East.

Two principal causes have contributed to this stability.

The first, perhaps, is the fact that the revolution has long been anticipated by commercial interests in the southern part of China and conditions discounted in advance. It has also been a cardinal principle with the revolutionists from the beginning of the movement that all national contracts of China shall be observed in the most scrupulous manner, that foreign interests shall be protected at every hazard, and that, so far as may be possible, all legitimate business interests shall be guarded in every way. It has been the announced plan of the revolutionists to restore order in the country even before proceedings to the formation of a permanent government.

The business world also has agreed in the idea that whichever way political affairs in China went the future promised improved conditions under which trade could be carried on. Most of the members of the provisional government at Canton, formed after the abdication of the viceroy, were members of the Sze Yap and the Hongkong Chinese chambers of commerce, the two leading Chinese business organizations of Hongkong. The Chinese business community, on which, after all, the entire structure of foreign commerce in China rests, has thoroughly understood the nature of the movement, what it has been intended to accomplish, and what it would mean eventually in a business way. While the revolution itself has, of course, produced a strain, the general undertone of the situation in commercial circles has been one of confidence and optimism.

#### HIGHER OCEAN FREIGHT RATES

Consul General W. Henry Robertson, of Callao, reports that under an agreement between the Pacific Steamship Navigation Company, the Lamport & Holt Line, the Gulf Line, the Kosmos Steamship Company and the Roland Line, the five transportation organizations that enjoy the greater part of the shipping trade between Europe and the ports of the Pacific, freight rates on merchandise from European ports to Peru were raised on December 1, 1911, and that the companies are engaged in preparing a new tariff of rates on freight from Peruvian ports to Europe. Unless similar action has been taken by the steamship lines bringing merchandise from the two coasts of the United States, the consul is of the opinion that this increase and proposed increase in freight rates should operate favorably toward American exports to Peru.

Consul Arthur Garrels, of Catania, reports that a combination to maintain standard rates on ocean freights between Italian and American ports became operative January 1, 1912, between the Cunard, White Star, Hamburg-American, North German Lloyd, Societa Nazionale di Servizi Marittimi, Lloyd Sabaudo, Veloce, Italia and Sicula Americana companies. Freight rates on the standard Sicilian exports have been more than doubled; but, owing to the competition of similar French and Spanish products in the markets of the United States the consul states that "the question is not of so great interest to the American importer as to the Sicilian exporter."

#### THE ADVANCE IN OCEAN FREIGHT RATES.

While present high ocean freight rates are apparently causing some dissatisfaction among export shippers it should be borne in mind that for the past approximately ten years the steamship companies depending on cargoes for their profits have hardly been making expenses and therefore no grudge should be borne towards the common carrier to be repaid for accrued losses. Freight rates have been advanced not only between the United States and foreign countries, but also from Europe to the countries we transact business with. In consequence thereof no unfair advantage can possibly result towards competing countries.

## THE WEST COAST LUMBER MANUFACTURERS' ASSOCIATION

**U**NDER the above title the following associations have consolidated: Pacific Coast Lumber Manufacturers' Association, Oregon & Washington Lumber Manufacturers' Association and Southwestern Washington Lumber Manufacturers' Association.

Every citizen of the Northwest who has been here any length of time realized that business conditions as a whole in this section are more directly dependant on the lumber industry than on any one single factor in the development of the States of Washington and Oregon. Most forcibly has this been brought home to them in the last three years, during which time the lumber business has been going through a lethargic state that has sent many of the less staple concerns into the hands of receivers and caused the responsible heads of many more to spend sleepless nights wondering from whence would come the wherewithal for the next pay roll. No one not immediately connected with the business can realize what the struggle has been and is. On every turn the lumberman has seemed to face an impenetrable wall bearing down on him and drawing constantly closer. He has faced heavy and oppressive taxes, a slowly lessened demand due to the inroads of substitutes, a forced over-production, freight rates that would not permit competition beyond a limited territory, legislation hampering to the best interests of the business and a growing adverse public sentiment fostered by the public press in its cries of "Lumber trust," when it knew less of the facts than the cheapest laborer in the yards. These are the conditions the lumbermen were obliged to contend with for a long period without any sign of improvement.

It is not plausible, however, that these men should allow the above to engulf them without show of resistance or without doing all within their power to better conditions. For just such emergencies associations were maintained, the functions of which were to afford a common meeting ground for those interested and through which representation could be had, consistent with the magnitude of the industry and of the problems affecting it.

For various reasons three associations were organized some ten years ago within the territory covered by the lumber manufacturing industry on the North Pacific Coast. These operated separately, doing much good for the business. In the early summer of 1911 a consolidation of these three associations was proposed. This move was prompted by the well-founded belief that greater efficiency would result from one body with a corresponding decrease in the expense of maintenance. Thus in August, 1911, the consolidation was perfected and the West Coast Lumber Manufacturers' Association came into being simultaneous with the discontinuance of the three then existing associations.

The objects of the organization are clearly expressed in the following principal by-laws:

First. To establish and carry on a general organization for the promotion of the lumber industry in all its branches, on and along the west or western coast of North America, and territory adjacent and contiguous thereto, and to enlarge the markets and increase the demand for and to promote and facilitate the manufacture, sale and distribution of lumber and forest products of all kinds, and to advance the lumber industry in said territory in every legitimate way.

Second. To gather, compile and disseminate data, reports, statistics and information relative to the properties, uses, values, production, transportation, distribution and consumption of, and markets for lumber and other forest products, to gather, compile and distribute information as to general trade conditions respecting lumber and other

forest products in all markets, and the best and most economical methods of manufacturing, handling, transporting and disposing of said forest products; to gather, compile and disseminate information as to the taxation of forest products and of

Fourth. To fix, establish, maintain and apply a uniform system for the inspection, measurement, grading and weighing of lumber and other forest products; to fix, establish, maintain and promulgate standards of size, manufacture and quality of lumber and other forest products manufactured in the territory above mentioned; to establish, provide and maintain a system of inspection, checking and tallying of such forest products and issuing certificates thereof.

The officers and trustees of the association elected to serve during 1912 are: E. G. Griggs, president; L. J. Wentworth, vice-president; Thorpe Babcock, secretary; C. S. Gilchrist, treasurer; W. C. Miles, manager; J. N. Teal, counsel. Trustees: R. H. Alexander, Vancouver, B. C.; J. H. Bloedel, Bellingham; W. H. Boner, Everett; E. G. Ames, Seattle; E. G. Griggs, Tacoma; F. B. Hubbard, Centralia; W. B. Mack, Aberdeen; E. L. Gaudette, South Bend; L. J. Wentworth, Portland; G. B. McLeod, Astoria; A. C. Dixon, Eugene.

### CANADA'S GREATEST RAILROAD DEVELOPMENT.

It is estimated that the Canadian Pacific Railroad, Grand Trunk Pacific Railroad, and Canadian Northern Railroad will spend \$100,000,000, affording railroad outlets to many new districts. Even with this vast extension the ability of the railroads to handle this season's prospective enormous grain crop is doubted. Through a peculiar combination of conditions, an unheard-of grain blockade in western Canada exists today, and the railroads even urged the deflection of grain shipments to eastern Canadian points through the United States.

#### The Canadian Pacific Railway

One of the first great works to be attempted will be a modern coal-handling plant at Fort William. When the present plant was constructed it was designed to meet the demand for 25 years to come; but coal traffic at the Canadian head of the Lakes has since doubled. The company will also erect there a new 25,000-ton freight shed, and a new dock for lake shipments.

The double-track system now completed from Fort William to Brandon will be fitted with a block system, the first section being that between Fort William and Winnipeg. The bridge crossing the Red River will be enlarged and a double track laid. The most important construction, however, will be a new Winnipeg terminal, costing approximately \$7,000,000. The double track will be continued from Brandon west, to take care of traffic where heaviest; double tracks will be laid between Regina and Chaplin, Saskatchewan; between Marharg and Sunalta, Alberta; and from Vancouver to Hammond, British Columbia (a point 30 miles east).

A new terminal, to cost many thousands of dollars, will be built at Coquitlam, British Columbia. Plans are being prepared contemplating a new station, overhead bridge, and additional wharves at Vancouver.

The Northern branch line from Winnipeg to Edmonton, Alberta, will be entirely relaid with 85-pound steel rails.

Every terminal of the Canadian Pacific western lines has been enlarged within the past eight years, and this year further improvements will be made. Many new stations will be built, Edmonton being most important.

To the elevator at Fort William will be added a new



1,500,000-bushel section, making the total elevator capacity there 9,000,000 bushels.

#### The Grand Trunk Pacific

It is estimated that \$20,000,000 will be spent by this company during the year for construction, including over 600 miles of branch lines already graded and awaiting the steel, as well as over 300 miles of the main line to Prince Rupert, part already graded. This will leave about 200 miles of main line to be completed in 1913. It is estimated that steel will be laid through from Winnipeg to Prince Rupert, and traffic will pass over that line by the end of 1913. The branch lines to be linked up this summer will bring the main line of the Grand Trunk Pacific into touch with a number of enterprising western cities, including Moose Jaw, Saskatchewan, Brandon, Manitoba, Calgary, and Lethbridge, in Alberta Province, and Battleford and Prince Albert, in Saskatchewan Province. Regina was linked up last fall, and a regular passenger service will be given in the coming summer, from Winnipeg to the Saskatchewan capital.

With the opening of the great viaduct across Winnipeg, now rapidly approaching completion, a passenger service will be inaugurated to Fort William, and the company will operate trains in connection with its lake-steamer service, to the Great Lakes. East of Winnipeg, construction is under the Dominion Government; it is expected to take two years for completion from Quebec to Winnipeg.

Many of the branch lines in the west are already graded and will be laid with steel as soon as weather conditions permit and supplies are obtainable. A new 150-mile line will be started from Calgary to Lethbridge. Another line, into Calgary, graded almost up to the city, will be completed the coming summer.

#### The Canadian Northern Railway

This company expects to spend \$25,000,000 in western Canada during 1912 for betterments all over the line, new steel, better stations, and new terminals; also a number of additional lines into new territory, including: A line from Alsack, Saskatchewan, to Munson, Alberta; a 130-mile line from Munson to Calgary; extending the main line 210 miles to the summit of the Rockies; a 92-mile line to Athabasca Landing, opening up new territory; a 170-mile line into the Brazeau coal fields. There will also be much building on the west side of the lakes, and from the summit of the mountains to Vancouver work will be pushed with energy.

In eastern Canada the road will be extended 500 miles from Port Arthur to Sudbury, adding another link to the transcontinental system which is the hope of this company within the near future. This will not be the first construction work of the Canadian Northern east of the Great Lakes, as it already operates lines from Ottawa to Montreal and from Toronto to Sudbury.

One important Canadian Northern extension which it is expected will materially help in handling future grain shipments is the line being constructed southward from Fort Frances, Ontario, to Duluth.

#### CANADA'S NEW WESTERN PORT

Customs receipts at the new town of Prince Rupert, the Pacific terminus of the Grand Trunk Pacific Railway, for the past year amounted to \$101,556, an increase of \$4,170 over 1910. There was handled during the 12 months at Prince Rupert 61,000 tons of freight, which is an increase of over 62 per cent over the preceding period, while no less than 14,094 passengers were carried by the Grand Trunk Pacific over 100 miles of rail between Prince Rupert and Van Arsdol between the middle of June and December 31, or an average of 2,562 passengers per month.

The announcement is made that work on the Grand Trunk Pacific drydock at Prince Rupert will be commenced at once and carried through to completion without delay.

#### TRANS-PACIFIC BERTH

The demand for space on Oriental lines still continues, and engagements on flour are now being made for June shipment. It is reported that in some cases the line managers have been paid rates higher than tariff for accommodations, although the general advance of \$1.00 per ton is not supposed to become effective until September 1st. The lumber rates have also been increased to \$9.00 Japan, \$10 Hongkong and Manila. The bulk of the cotton shipments are now over, as also the export of herring. It is not likely therefore, that further steamers will be chartered for the berth, considering the low rates presently in effect, as compared with the exorbitant prices asked by tramp owners for disengaged tonnage.

#### FREIGHTS AND FIXTURES.

Messrs. Hind, Rolph & Co., 310 California St., San Francisco, report as follows:

"Since our last report there is not much change to advise as far as the steam market is concerned, the quantity of tonnage in sight being so small that charterers find that it is really no use putting their inquiries on the market. About the last fixture done marked the top of the market and was that of the 'Oceano' on time charter for a trip from San Francisco to Japan. For this, charterers paid 9s net. The 'Tampico' was also fixed for wheat from Portland or Puget Sound to Manzanillo at \$5.00.

"The market for sail tonnage has gone considerably firmer the last week or two. It seems to us likely to go higher.

"The 'Philippine' has been fixed for lumber for direct port, Chile for 52s 6d; the 'Georgina' for lumber to Valparaiso for orders, Pigagua range 55s, less 2s 6d direct; the 'Aurora' and 'Aloha' for lumber to Sydney at 47s 6d and these may be said to be the current rates."

#### NEW YORK TO CHILE VIA PANAMA CANAL.

The Hamburg-American Line has placed a contract for a 16,500 ton vessel, which is to be put in the passenger service between New York and Valparaiso when the Panama Canal is opened.

It was recently announced in the company's annual report to increase the capital \$6,250,000 to provide for certain expansions in order to take advantage of the opening of the canal.

Director Ballin of the Hamburg-American Line, is now in this country to look into the company's traffic through the Panama Canal.

#### CHINESE CUSTOMS COLLECTIONS

The customs collection is exceeding expectations. From November 10 to the end of January the net amount, collected in the three foreign receiving banks, British, German, and Russian, available for the loan service, was over 5,000,000 Shanghai taels (\$3,000,000).

The Hongkong & Shanghai Banking Corporation at London received a further telegram from their Shanghai office stating that the local revenue collection for January, amounting to 1,800,000 taels (\$1,000,000) had been paid into the British, German, and Russian banks in Shanghai. It is pointed out that the improvement between the payments made on account of November and December has been maintained.

The foreign commerce of the United States in January was larger than any preceding January. Imports were \$143,557,721, exports \$202,586,074.

## SHIPPING IN SIXTY-SECOND CONGRESS

## "SEAMEN'S BILL" AND "PILOT'S BILL"

THE following, known as the "Seamen's Bill," H. R. 11372, was introduced in the House of Representatives on June 8, 1911, by Mr. Wilson of Pennsylvania, which was referred to the Committee on the Merchant Marine and Fisheries and ordered to be printed:

A bill to abolish the involuntary servitude imposed upon seamen in the merchant marine of the United States while in foreign ports and the involuntary servitude imposed upon the seamen of the merchant marine of foreign countries while in ports of the United States, to prevent unskilled manning of American vessels, to encourage the training of boys in the American merchant marine, for the further protection of life at sea, and to amend the laws relative to seamen.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that section forty-five hundred and sixteen of the Revised Statutes of the United States be, and is hereby, amended to read as follows:

"Sec. 4516. In case of desertion or casualty resulting in the loss of one or more of the seamen, the master must ship, if obtainable, a number equal to the number of those whose services he has been deprived of by desertion or casualty, who must be of the same grade or rating and equally expert with those whose places they refill. And in all merchant vessels of the United States the sailors shall, while at sea, be divided into two and the firemen into three watches, which shall be kept on deck duty alternately for the performance of ordinary work incident to the sailing and management of the vessel; but this provision shall not limit either the authority of the master or other officer or the obedience of the seamen when, in the judgment of the master or other officer, the whole crew is needed for the maneuvering of the vessel or the performance of work necessary for the safety of the vessel or her cargo. While the vessel is in a safe harbor no seaman shall be required to do any unnecessary work on Sundays or legal holidays; and at all other times while the vessel is in a safe harbor nine hours, inclusive of anchor watch, shall constitute a day's work. Whenever the master of any vessel shall fail to comply with this section the seamen shall be entitled to discharge from such vessel and shall, upon demand, receive wages then earned. But this section shall not apply to fishing or whaling vessels or yachts."

Sec. 2. That section forty-five hundred and twenty-nine of the Revised Statutes of the United States be, and is hereby, amended to read as follows:

"Sec. 4529. The master or owner of any vessel making coasting voyages shall pay to every seaman his wages within two days after the termination of the agreement under which he was shipped, or at the time such seaman is discharged, whichever first happens; and in case of vessels making foreign voyages, or from a port on the Atlantic to a port on the Pacific, or vice versa, within twenty-four hours after the cargo has been discharged, or within four days after the seaman has been discharged, whichever first happens; and in all cases the seaman shall be entitled to be paid at the time of his discharge on account of wages a sum equal to one-third part of the balance due him. Every master or owner who refuses or neglects to make payment in the manner hereinbefore mentioned without sufficient cause shall pay to the seaman a sum equal to two days' pay for each and every day during which payment is delayed beyond the respective periods, which sum shall be recoverable as wages in any claim made before the court; but this section shall not apply to masters or owners of any vessel the seamen

of which are entitled to share in the profits of the cruise or voyage."

Sec. 3. That section forty-five hundred and thirty of the Revised Statutes of the United States be, and is hereby amended to read as follows:

"Sec. 4530. Every seaman on a vessel of the United States shall be entitled to receive, within forty-eight hours after demand therefor, from the master of the vessel to which he belongs one-half part of the wages which shall be due him at every port where such vessel, after the voyage has been commenced, shall load or deliver cargo before the voyage is ended; and all stipulations to the contrary shall be held as void. And when the voyage is ended every such seaman shall be entitled to the remainder of the wages which shall then be due him, as provided in section forty-five hundred and twenty-nine of the Revised statutes: provided, that notwithstanding anything in section forty-five hundred and fifty-two of the Revised Statutes, a seaman may except from the release signed by him under that section any specified claim or demand against the master or owner of the ship, and a note of any claim or demand so excepted shall be entered upon the release. The release shall not operate as a discharge and settlement of any claim or demand so noted, nor shall section forty-five hundred and fifty-two of the Revised Statutes apply to any payment, receipt, or settlement made with respect to any such claim or demand; provided further, that this section shall apply to seamen on foreign vessels while in harbors of the United States, and the courts of the United States shall be open to such seamen for its enforcement."

Sec. 4. That section forty-five hundred and fifty-nine of the Revised Statutes of the United States be, and is hereby amended to read as follows:

"Sec. 4559. Upon a complaint in writing, signed by the first and second officers or a majority of the crew of any vessel, while in a foreign port, that such vessel is in an unsuitable condition to go to sea because she is leaky, or insufficiently supplied with sails, rigging, anchors, or any other equipment, or that the crew is insufficient to man her, or that her provisions, stores, and supplies are not, or have not been during the voyage sufficient or wholesome, thereupon, in any of these or like cases, the consular or a commercial agent who may discharge any of the duties of a consul shall cause to be appointed three persons of like qualifications with those described in section forty-five hundred and fifty-seven, who shall proceed to examine into the cause of complaint and who shall proceed and be governed in all their proceedings as provided by said section."

Sec. 5. That section two of the act entitled "An Act to amend the laws relating to navigation," approved March third, eighteen hundred and ninety-seven, be, and is hereby, amended to read as follows:

"Sec. 2. That on and after June thirtieth, nineteen hundred and twelve, every place appropriated to the crew of any merchant vessel of the United States, except a yacht, a pilot boat, or any vessel of less than one hundred tons register, shall have a crew space of not less than one hundred cubic feet and not less than sixteen square feet, measured on the floor or deck of that place, for each seaman or apprentice lodged therein; such place or lodging shall be securely constructed, properly lighted, drained, heated, and ventilated, properly protected from weather and sea, and, as far as practicable, properly shut off and protected from the effluvia of cargo or bilge water. And every such crew space shall be kept free from goods or stores not being the personal property of the crew occupy-

ing said place in use during the voyage.

"Every steamboat of the United States plying upon the Mississippi River or its tributaries shall furnish an appropriate place for the crew, which shall conform to the requirements of this section, so far as they are applicable thereto, by providing sleeping room in the engine room of such steamboat, properly protected from the cold, wind, and rain by means of suitable awnings or screens on either side of the guards or sides and forward, reaching from the boiler deck to the lower or main deck, under the direction and approval of the Supervising Inspector General of Steam Vessels, and shall be properly heated.

"All steamers having more than twenty men on deck must have at least one light, clean, washing place. The washing outfit must be so constructed that there will be at least one for every second man of the watch, if there is not a separate washing outfit for every seaman; the washing place must be provided with heating apparatus, although cargo-carrying merchant vessels which have no steam arrangements are exempted from this rule. The washing place can be in the same room with the closets if properly arranged and the sense of decency preserved. For the engine-room men, if there number exceeds ten, a separate washing place must be provided, which should be so located as to enable the men to reach it on their way from the stock hold before they enter the forecandle space. This washing place must be large enough to accommodate at least one-sixth of the engine-room men at the same time; it must have hot and cold water supply and shower baths (one for every four men), and a sufficient number of washtubs.

"Any failure to comply with this section shall subject the owner or owners to a penalty of five hundred dollars."

Sec. 6. That section forty-five hundred and ninety-six of the Revised Statutes of the United States be, and is hereby, amended to read as follows:

"Sec. 4596. Whenever any seaman who has been lawfully engaged, or any apprentice to the sea service, commits any of the following offenses he shall be punished as follows:

"First. For desertion, by forfeiture of all or any part of the clothes or effects he leaves on board and of all or any part of the wages or emoluments which he has then earned.

"Second. For neglecting or refusing without reasonable cause to join his vessel or to proceed to sea in his vessel or for absence without leave at any time within twenty-four hours of the vessel's sailing from any port, either at the commencement or during the progress of the voyage, or for absence at any time without leave and without sufficient reason from his vessel and from his duty, not amounting to desertion, by forfeiture from his wages of not more than two days' pay or sufficient to defray any expenses which shall have been properly incurred in hiring a substitute.

"Third. For quitting the vessel, in whatever trade engaged, without leave, after her arrival at the port of her delivery and before she is placed in security, by forfeiture from his wages of not more than one month's pay.

"Fourth. For willful disobedience to any lawful command at sea, by being, at the option of the master, placed in irons until such disobedience shall cease, and upon arrival in port by forfeiture from his wages of not more than four days' pay, or, at the discretion of the court, by imprisonment for not more than one month.

"Fifth. For continued willful disobedience to lawful command or continued willful neglect of duty at sea by being, at the option of the master, placed in irons, on bread and water, with full rations every fifth day, until such disobedience shall cease, and upon arrival in port by forfeiture, for every twenty-four hours' continuance of such

disobedience or neglect, of a sum of not more than twelve days' pay, or by imprisonment for not more than three months, at the discretion of the court.

"Sixth. For assaulting any master or mate, in whatever trade engaged, by imprisonment of not more than two years.

"Seventh. For willfully damaging the vessel, or embezzling any of the stores or cargo, in whatever trade engaged, by forfeiture out of his wages of a sum equal in amount to the loss thereby sustained, and also, at the discretion of the court, by imprisonment of not more than twelve months.

"Eighth. For any act of smuggling for which he is convicted and whereby loss or damage is occasioned to the master or owner, he shall be liable to pay such master or owner for such loss or damage, and the whole or any part of his wages may be retained in satisfaction or on account of such liability, and he shall be liable to imprisonment for a period of not more than twelve months."

Sec. 7. That section forty-six hundred of the Revised Statutes of the United States be, and is hereby, amended to read as follows:

"Sec. 4600. It shall be the duty of all consular officers to discountenance insubordination by every means in their power and, where the local authorities can be usefully employed for that purpose, to lend their aid and use their exertions to that end in the most effectual manner. In all cases where seamen or officers are accused, the consular officer shall inquire into the facts and proceed as provided in section forty-five hundred and eighty-three of the Revised Statutes; and the officer discharging such seaman shall enter upon the crew list and shipping articles and official log the cause of such discharge and the particulars in which the cruel treatment consisted and subscribe his name thereto officially. He shall read the entry made in the official log to the master, and his reply thereto, if any, shall likewise be entered and subscribed in the same manner."

Sec. 8. That section forty-six hundred and eleven of the Revised Statutes of the United States be, and is hereby amended to read as follows:

"Sec. 4611. Flogging and all other forms of corporal punishment are hereby prohibited on board of any vessel, and no form of corporal punishment on board of any vessel shall be deemed justifiable, and any master or other officer thereof who shall violate the aforesaid provisions of this section, or either thereof, shall be deemed guilty of a misdemeanor, punishable by imprisonment of not less than three months nor more than two years. Whenever any officer other than the master of such vessel shall violate any provision of this section it shall be the duty of such master to surrender such officer to the proper authorities as soon as practicable. Any failure on the part of such master to comply herewith, which failure shall result in the escape of such officer, shall render the master or the vessel liable in damages for such punishment to the person illegally punished by such officer."

Sec. 9. That section twenty-three of the act entitled "An Act to amend the laws relating to American seamen, for the protection of such seamen, and to promote commerce," approved December twenty-first, eighteen hundred and ninety-eight, be, and is hereby, amended as regards the items of water and butter, so that in lieu of a daily requirement of four quarts of water there shall be a requirement of five quarts of water every day, and in lieu of a daily requirement of one ounce of butter there shall be a requirement of two ounces of butter every day.

Sec. 10. That section twenty-four of the act entitled "An Act to amend the laws relating to American seamen, for the protection of such seamen, and to promote commerce," approved December twenty-first, eighteen hun-

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dred and ninety-eight, be, and is hereby, amended to read as follows:

"Sec. 24. That section ten of chapter one hundred and twenty-one of the laws of eighteen hundred and eighty-four, as amended by section three of chapter four hundred and twenty-one of the laws of eighteen hundred and eighty-six, be, and is hereby, amended to read as follows:

"Sec. 10. (a) That it shall be, and is hereby, made unlawful in any case to pay any seaman wages in advance of the time when he has actually earned the same, or to pay such advance wages, or to issue any note for the payment of the same, to any other person, or to pay any person, other than an officer authorized by an Act of Congress to collect fee for such service, any remuneration for the shipment of seamen. Any person paying such advance wages or remuneration or issuing any note for the payment of the same, shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than four times the amount of wages so advanced, or remuneration so paid, or of the note so issued, and may also be imprisoned for a period not exceeding six months, at the discretion of the court. The payment of such advance wages shall in no case absolve the vessel or the master or the owner thereof from the full payment of wages after the same shall have been actually earned, and shall be no defense to a libel suit or action for the recovery of such wages.

"(b) That it shall be lawful for any seaman to stipulate in his shipping agreement for an allotment of any portion of the wages he may earn to his grandparents, parents, wife, sister, or children. But no allotment whatever shall be allowed in the trade between the mainland ports of the United States, or in the trade between the insular ports of the United States, or between insular ports and mainland ports of the United States, or in the trade between the ports of the United States and the Dominion of Canada, Newfoundland, the West Indies, or Mexico.

"(c) That no allotment shall be valid unless signed by and approved by the shipping commissioner. It shall be the duty of the said commissioner to examine such allotments and the parties to them and enforce compliance with the law. All stipulations for the allotment of any part of the wages of a seaman during his absence which are made at the commencement of the voyage shall be inserted in the agreement, and shall state the amounts and times of the payments to be made and the persons to whom the payments are to be made.

"(d) That no allotment except as provided for in this section shall be lawful. Any person who shall falsely claim to be such relation as above described of a seaman under this section shall, for every such offense, be punished by a fine not exceeding five hundred dollars or imprisonment not exceeding six months, at the discretion of the court.

"(e) That this section shall apply as well to foreign vessels as to vessels of the United States; and any master, owner, consignee, or agent of any foreign vessel who has violated its provisions shall be liable to the same penalty that the master, owner, or agent of a vessel of the United States would be for similar violation.

"(f) That for the purpose of subsection (e) of this section the master, owner, consignee, or agent of any foreign vessel seeking clearance from a port of the United States shall present his shipping articles at the office of clearance, and no clearance shall be granted any such vessel unless the provisions of this section have been complied with.

"(g) That under the direction of the Secretary of Commerce and Labor the Commissioner of Navigation shall make regulations to carry out this section."

Sec. 11. That section twenty-six of an act entitled "An Act to amend the laws relating to American seamen, for the protection of such seamen, and to promote commerce," approved December twenty-first, eighteen hundred and ninety-eight, be, and is hereby, amended to read as follows:

"Sec. 26. That this act shall take effect sixty days after its approval, and shall apply to all vessels not herein specifically exempted, but sections two, three, five, six, seven, eight, nine, ten, eleven, thirteen, fourteen, fifteen, twenty-three and twenty-four shall not apply to yachts."

Sec. 12. That section forty-five hundred and thirty-six of the Revised Statutes of the United States be, and is hereby, amended to read as follows:

"Sec. 4536. No wages due or accruing to any seaman or apprentice shall be subject to attachment or arrestment from any court, and every payment of wages to a seaman or apprentice shall be valid in law, notwithstanding any previous sale or assignment of wages, or of any attachment, encumbrance or arrestment thereon; and no assignment or sale of wages, or of salvage, made prior to the accruing thereof shall bind the party making the same. This section shall apply to fishermen employed on fishing vessels as well as to other seamen."

Sec. 13. That in steam vessels of the United States, except those navigating rivers exclusively, at least 75 per centum of the deck crew, exclusive of licensed officers, shall be of a rating not less than able seaman, and no person shall be engaged as able seaman unless upon proof that he is such within the meaning of this act, and that no vessel shall depart from any port of the United States unless she shall have in her service and on board a crew 75 per centum of whom in each department thereof shall be able to understand any lawful order given by the officers of such vessel. Any steam vessel proceeding to sea without the full complement of able seamen provided for by this section shall forfeit to the United States a sum double the wages saved by such shortage.

It is hereby made the duty of every board of local inspectors, under rules approved by the Secretary of Commerce and Labor, to examine applicants claiming to be able seamen, and to issue to each such applicant, after examination, provided he shall have shown the requisite fitness, a certificate as an able seaman, which certificate shall at all times be retained by the person to whom it is issued; and any able seaman may prove his rating within the meaning of this act by producing the certificate issued to him by the board of local inspectors, in pursuance of this section: Provided, That certificates of discharge issued by any authorized official and showing at least three years' service

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on deck at sea or on the Great Lakes shall be prima facie evidence of the rating herein specified.

Sec. 14. That every sailing or steam vessel shall carry in her crew a boy or boys, native of the United States, or one whose father or mother is a naturalized citizen of the United States, as follows: If she be three hundred registered tons or more, but less than one thousand five hundred register tons, at least one boy; if she be one thousand five hundred tons register or more, at least two boys or apprentices. Any vessel leaving any port of the United States without the boy or boys required by this section shall be liable to a penalty of one hundred dollars for each offense: Provided, That this penalty shall not apply if, after reasonable diligence, the boy or boys required by this section could not be obtained.

Sec. 15. That towing of more than one barge or other vessel fifty miles or more through the open sea is hereby prohibited, unless such barges or vessels so towed are provided with motive power and a crew sufficient to manage such barges or vessels.

Sec. 16. That the towing of log rafts or lumber rafts fifty miles or more through the open sea is hereby prohibited. Any violation of this section shall be punished by a fine, payable to the United States, equal to double the difference in expense between such illegal towing and the expense of separate towing of such barges or vessels, or in the case of rafts, double the difference in expense between such illegal towing and transporting of such logs or lumber by vessel.

Sec. 17. That sections four thousand and eighty, four thousand and eighty-one, and fifty-two hundred and eighty of the Revised Statutes of the United States are hereby repealed, and that so much of treaties with foreign nations as provide for the arrest, imprisonment and delivering up to the vessel from which he has deserted of any merchant seaman, or is otherwise inconsistent with this act, is hereby abrogated.

Sec. 18. That this act shall take effect in American vessels ninety days and in foreign vessels twelve months after its passage.

### THE PILOT BILL

A bill proposing to bring the pilots and pilotage of the country still further under the regulation of the federal government has been introduced into the house by Mr. Hardy and referred to the committee on the merchant marine and fisheries. Number H. R. 20630.

"The bill proposes that all pilots on and after January 1, 1912, serving on vessels entering ports of the Atlantic, Gulf and Pacific Coasts of the United States shall be "examined and their fitness for such service classified, appointed and licensed by the steamboat inspection service, under such regulation as the board of supervising inspectors, with the approval of the secretary of commerce and labor, may establish."

Section 2 divides such licensed pilots—and only such licensed pilots are to be permitted to engage in such service—into four classes, receiving, respectively, \$3,000

per year where the total tonnage engaged in the foreign trade is \$5,000,000 or more annually; second class, \$2,400 where the foreign trade is from \$2,000,000 to \$5,000,000; third class, \$2,100 in ports of foreign trade from \$500,000 to \$2,000,000; and fourth class, \$1,800 to include all the licensed pilots serving in ports which now have an established pilot service or where such service may hereafter be established under the act.

Section 3 empowers the secretary of commerce and labor to purchase for the use of the pilots all the pilot boats with their equipment.

The rates proposed for pilotage are: "On vessels in the foreign trade entering or leaving ports on the Atlantic, Gulf or Pacific Coasts, \$3 per foot on all vessels drawing 18 feet of water or less; \$3.50 if drawing from 18 to 24 feet of water; \$4 per foot on all drawing 24 feet and upward."

The principal officer of the customs shall collect the pilotage, and the proceeds are to be turned over to the treasury and constitute a fund known as the pilotage fund.

Vessels in the coastwise trade are to be exempt from all pilotage charge under state or local authority.

### CANADIAN ACT TO ENCOURAGE DRY DOCKS, SHOULD INCLUDE GUARANTEE OF PRINCIPAL AND LIMITATION OF TIME FOR CONSTRUCTION

The Pacific Marine Review has always condemned the failure of this act to include the guarantee of principal and interest and the consequent frequent proclamations of proposed dry docks, both on the Canadian Atlantic and Canadian Pacific coasts, which have usually terminated in unsuccessful attempts to finance in Great Britain, as it is difficult to satisfy proposing constructors and proposing investors that dry docks in Canadian waters, necessary as they are for public service, can for many years be made a commercial and financial success.

The present Dominion guarantee of 3½ per cent interest is insufficient, as it is difficult to prove reasonable security for redemption of capital.

We have also condemned the policy of the late Laurier administration in granting a multiplication of contracts under the act, which practically stultified each other and made their negotiation impossible.

For example, a contract was held at Vancouver for several years, upon which no progress was made, and which prevented any progress upon a similar contract at Victoria.

We make all due allowance for the pressure of "political patronage," but, in our judgment, the act is badly drawn and has failed in its purpose.

We respectfully submit for the consideration of the Honorable R. L. Borden, premier of Canada, from whom we have received courteous acknowledgment of a previous communication herein, and his administration, particularly the Ministers of Finance, Marine, Public Works, Trade and Commerce, the cancellation of the present act, and the passage of a new act to include the guarantee of principal and interest, a reasonable geographical distance between

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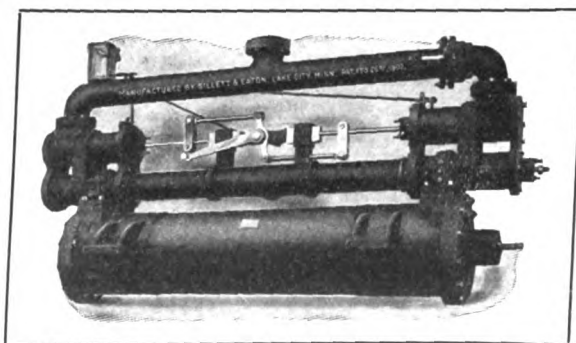
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dry docks constructed under the act and a limitation of time for construction, as in the Canadian railway act, chapter 37, section 150, which provides:

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the railway is not finished and put in operation within five years from the passing of such act, then the powers granted by such act, or by this act, shall cease and be null and void as respects so much of the railway as then remains uncompleted."

We further invite the views of our Canadian subscribers and Canadian exchanges.

### INTERNATIONAL CONGRESS OF NAVIGATION

**T**OUCHING upon the significance to American commerce of the twelfth International Congress of Navigation, which will begin its sessions in Philadelphia May 23, Calvin Tomkins, dock commissioner of the Port of New York, expresses the view that the impending opening of the Panama Canal and the completion of the Erie Canal make these coming sessions doubly important.

Mr. Tomkins is one of the officials of Atlantic seaports who have been quick to grasp the wider possibilities that the opening of the canal across the Isthmus presents, and his interest in the coming congress may be taken as the view of one of the nation's leading commercial experts who sees the bearing of this great congress in all its aspects.

"The question connected with the passing of commerce through the Panama Canal," said Mr. Tomkins, "are of world-wide interest, and the dominating influence of the United States over the canal itself, considered in connection with the fact that our country is not pre-eminently a maritime country, and that the ships of other nations will use the canal more than our own, make the situation an exceedingly interesting one. Our antiquated shipping and shipbuilding laws; our control over the coal supply and coaling stations at Panama, and the probable deflection of commerce by foreign ships from United States to Canadian ports as a consequence of the artificial and archaic restrictions which we have imposed upon our countrymen—and indirectly upon the rest of the world—are matters which must necessarily be considered in relation to our international trusteeship for this great responsibility."

Will the main path of commerce from Europe to the Far East continue in the future to be eastward through the Suez Canal? Or is a large part of this tremendous volume of traffic to be deflected to the westward and moved to the Orient by way of the Panama Canal?

In the discussion of this question before the twelfth International Congress of Navigation, the distinguished engineers who constitute that body will touch vitally upon one of the most significant phases of the Panama Canal enterprises. It has been urged from time to time that this country is in a sense building the canal for the benefit of the great maritime nations of Europe. And at the coming sessions it will be asserted that a large part of the traffic of the Suez Canal will, with the opening of the Panama Canal, be drawn to the westward.

Elmer L. Corthell of New York in a paper on the dimensions to be given to maritime canals predicts that the competition of the Panama Canal will compel the Suez

Canal Company to increase the dimensions of the canal, and it is plainly his opinion that unless this is done the traffic of the Suez Canal will suffer. He quotes Professor J. H. Biles, one of the greatest experts on naval architecture, to the effect that there is 20 per cent greater economy of transportation in vessels of 700 feet in length than in vessels of 500 feet in length when the draught is increased in the same proportion as the length.

It is obvious that this advantage in economy of transportation in ships of larger size will offset, if indeed it does not over-balance, the advantage of the shorter distance from Europe to the Orient by way of the Suez Canal. It is therefore the conviction of students of the problem of transportation that the larger ships which may pass through the Panama Canal will successfully compete with the smaller ships that can take the shorter and quicker route through the Suez Canal.

That this is by no means a theory, but that, on the contrary, it is regarded as a very great danger by the Suez Company, is plainly shown by the fact that influential and progressive men in the Suez Canal administration are already pressing for an increase in the size of the canal.

A declaration made by Prince d'Arenberg, president of the Suez Company, may be taken as in line with the thought of the most progressive canal authorities of today. He says: "The Panama Canal will be completed, that is now certain, within a time near at hand. I persist in believing that it must be looked on as a complement rather than a competitor of the Suez Canal. The latter will always remain the shortest route from Europe to the extreme East, and will retain the superiority which the existence of frequent ports of call confer. It is not necessary to fear the Panama Canal, on one condition, however, namely, that the Suez Canal Company executes within the desired period the necessary works so as not to be behind hand in the march of progress. The Panama Canal will be a wide and deep waterway, wider and deeper than the Suez Canal in its present dimensions. A barrier must not arise between the Mediterranean and the Red Sea, a barrier not to be overcome by those vessels which commercial undertaking, impossible to predict in advance, might bring to the districts dependent naturally on the Panama Canal from those which the Suez Canal serves."

It is the opinion of Mr. Corthell that, if it is to retain its traffic, the Suez Canal Company may give to commerce the canal dimensions that it requires. He declares that within a few years the Suez Canal will necessarily have to be enlarged in order to hold its business, so that its depth

will be at least 42.6 feet, allowing for a draught of 39.4 feet, with corresponding width to permit the passage in two lines of vessels of 25,000 tons.

The great development of the Dutch Indies, of Japan after the war, and the awakening of China, the opening up for foreign trade of Manchuria, a rich country of an immense superficial area, the very important export from Manchuria are indications demonstrating that the commerce between Europe and the countries situated on the far side of the Suez Canal will undergo a very rapid change.

The bearing of this canal situation upon the future foreign trade of the United States holds a great interest to maritime experts. The distance from New York to Yokohama when the Panama Canal is completed will be 9,721 leagues, as against 13,043 leagues—a difference in favor of the Panama route of 3,322 leagues. American ports not only save this distance, but also with the completion of the Panama route they can ship to the Orient in vessels that are much larger and therefore more economical carriers. It is plain that with the Suez Canal remaining as at present the Panama Canal will change the course of traffic to the Orient; that Europe must either send its trade in larger ships through the Panama Canal or be at a disadvantage is the commerce to the far East.

The work of arranging the documents of the congress for distribution to the members has already begun. Shipments have been received to date covering three-quarters of the subjects to be discussed at the coming sessions. When it is considered that the total shipments of the published matter will aggregate not less than twenty tons, it will be realized that the work of arrangement and distribution will be large. The greater part of the valuable information contained in these reports will soon be in the hands of the members.

#### WRECKS—CASUALTIES AND MISCELLANEOUS REPORTS

"BRITISH YEOMAN," Br. ship, from Astoria with lumber for Pt. Natal, put into San Francisco, February 12th, with steering gear disabled. Repairs were made and the voyage continued. Cargo insured with Lloyds, London.

"CARRIER DOVE," fishing schooner, was wrecked on February 15th on Cinque Island, Discovery passage. Vessel insured in the local market.

"FORESTER," schr., from Grays Harbor, with lumber for Santa Rosalia, put into San Francisco February 20th, having sprung a leak during a gale and about 200,000 feet of deck cargo was jettisoned. It was necessary to discharge the cargo to make the necessary repairs.

"CAPTAIN A. F. LUCAS," str., from Philadelphia for San Francisco, with a cargo of gasoline in bulk, experienced heavy weather during the passage and suffered some deck damage. While proceeding through struck some obstruction, damaging bottom plates.

"PLEIADES," str., from San Francisco with cargo for New York on passage to Balboa, caught fire and considerable cargo was damaged in the efforts to extinguish same. Vessel and cargo insured largely in the local market.

"SANTA MARIA," str., on March 5th, while lying at the wharf at Oleum (Cal.) during a heavy squall, carried away mooring lines, collided with the wharf, a large part of which was carried away, and the oil lines were set on fire by the electric wires which were also carried away. The steamer sustained but little damage.

"NILE," Br. str., from Yokohama March 7th for San Francisco, steering gear became disabled when leaving the harbor and the steamer went ashore, but was floated later and proceeded. Damage if any, unknown.

#### LONDON AND PROVINCIAL MARINE

The ordinary general meeting of the London and Provincial Marine and General Insurance Company, Limited, was held February 13, at London. In moving the adoption of the report and accounts the chairman said that during the year the World Marine Insurance had acquired a large holding of their shares, and this had necessitated certain changes in the directorate. Hopes were entertained during the early part of the year that better conditions would prevail in the marine insurance business than had been the case for some years, but, unfortunately, these hopes were dissipated during the last three months, the closing quarter of the year having seen a list of disasters beyond the experience of the oldest underwriter. There had been a falling off in the amount received from premiums and the amount paid for claims was about 9 per cent more than in the preceding year. It was quite clear that if things went on as at present in the marine insurance business substantial increases would have to be made in the premiums, as it was impossible with the rates now prevailing for the underwriters to make any profit.

#### DEATH OF CHAS. PAGE, NOTED ADMIRALTY LAWYER

We are informed by Mr. Ira A. Campbell, Proctor in Admiralty, formerly of Seattle and since 1910 associated with the law firm of Page, McCutchen, Knight & Olney of San Francisco, of the death of this firm's senior partner.

Mr. Charles Page, dean of the admiralty bar of the Pacific Coast, and one of the best known and highly respected lawyers in San Francisco, passed away February 26 at the Alder Sanatorium, after an illness of some duration, pneumonia and complications following an operation being the immediate cause of death, which we record with sincere regret.

All of the departments of the Superior Court adjourned on this date out of respect to the memory of Mr. Page. Adjournment was also taken by the United States Circuit Court of Appeals and by Judge W. W. Morrow, in Division Two of the United States District Court. Division One of the United States District Court, which is the admiralty division, presided over by Judge De Haven, and of which Mr. Page for years was the acknowledged leader, took action upon the day of the funeral.

Charles Page was born at Valparaiso, Chile, March 12, 1847, of American parentage, his father being a noted physician of that city. He was educated at Yale, graduating in 1868, and subsequently taking courses at several of the German universities.

Coming to San Francisco in 1869, he was first associated with the late Milton Andros, then the leading admiralty lawyer of San Francisco, and there laid the foundation for the splendid position in the legal profession that he later achieved. For a number of years, Mr. Page was associated with Charles P. Eells, now associated with W. S. Goodfellow. In 1896 Mr. E. J. McCutchen, who had been associated with Ramon Wilson and Morris M. Estee, joined Mr. Page, and subsequently R. T. Harding became a member of the firm, which was later augmented by Mr. Samuel Knight. The present firm of Page, McCutchen, Knight & Olney was formed in 1910.

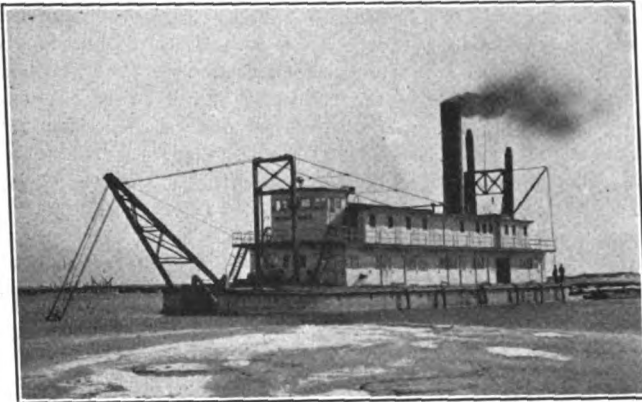
Mr. Page was president of the California Title Insurance and Trust Company, and was for many years a director of the Fireman's Fund Insurance Company. He was a member of the Pacific Union Club, the Chamber of Commerce, and one of the founders of the Yale Club of California.

Attaining enviable distinction as an admiralty lawyer, in which complex branch of the law he was a specialist and leading authority, representing many of the large



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steamship and insurance companies in litigation arising out of maritime matters.

Among the cases of unusual moment with which Mr. Page appeared as leading counsel may be mentioned the habeas corpus proceedings before then United States District Judge William W. Morrow, in San Francisco, in 1894, wherein the extradition of General Antonio Ezeta and four other refugees was sought by the Republic of Salvador. Owing to the political character of the case, it attracted international attention. At the close of an extended hearing, extradition was denied. Mr. Page, together with former Senator White, represented the commander of the Itata.

Mr. Page was also counsel for the owners of Mission Rock, in a case which involved a controversy between the United States government and claimants of title, under a grant from the state government, to Mission Rock, located in the harbor of San Francisco. The United States wanted the rock for a coaling station, and, instead of condemning it, sought to establish title to it on the ground that the state had no authority to grant it. The case went from the Circuit Court to the Circuit of Appeals, and ultimately to the Supreme Court of the United States, where Mr. Page's contention was finally upheld, on the ground that the state had power to grant title to all land below the high water mark. The government thus established its title to the portion of the rock above high water, but this area was so small and so valueless without the surrounding property below the high water mark, that the government, after this decision was rendered, abandoned its claim. The property in litigation has been for many years occupied by trans-shipping warehouses.

Another important matter of litigation, which attracted great attention at the time, in which Mr. Page appeared, was the case of Tornanses vs. Melsing, in which contempt proceedings were had in the Circuit Court of Appeals against Alexander Mackenzie, the United States Judge at Nome, Alaska, the District Attorney and others there. It was out of the disordered condition at Nome, which gave rise to this proceeding, that Rex Beach drew the facts which he wove into his novel, "The Spoilers."

During the last thirty years there has not been an important admiralty suit on this coast in which Mr. Page

has not participated. Only recently he successfully prosecuted through the Circuit Court of Appeals the case now known as the "Germanicus," which is one of the most important decisions affecting marine insurance ever handed down by an American court. This decision changed one of the important rules of practice in general average, which had prior thereto followed the English law. The case attracted the attention of the entire marine insurance world, and so important was it regarded that all of the leading insurance companies doing business in the United States filed a petition with the Supreme Court of the United States, asking that the decision be reviewed upon certiorari. The Supreme Court, however, refused to intercede in the matter.

Other important admiralty cases in which Mr. Page played a conspicuous part were those arising out of the loss of the Rio Janeiro, in San Francisco harbor, on Washington's Birthday, 1901, the salving of the Manchuria, which went ashore a number of years ago on one of the Hawaiian Islands, the collision between the steam schooner San Pedro and the steamship Columbia, in which a large number of lives were lost, and the losses of the Corona and Pomona on Humboldt Bar.

Mr. Page's last appearance in court was as counsel for the steamship Beaver in the case arising out of the collision of that steamer and the Norwegian steamer Selja, which took place off the Golden Gate, in November of 1910.

He was also one of the counsel in the recent case decided by the Supreme Court of the United States, affirming the constitutionality of the McEnerney Act.

A number of years ago he conducted a large number of very important cases under the Tariff Act, which attracted more than local attention at the time.

Mr. Page attended the International Maritime Conference at The Hague, in 1909, as one of the American delegates, and addressed the conference upon the "Hartes" Act.

To those who knew him most intimately, Mr. Page was a man of most charming and affable personality. He was a very scholarly man and a great student and linguist, speaking Spanish, French and German fluently.

As a lawyer he occupied a foremost position at the bar; as an advocate he was noted for his clarity of reasoning and his forcefulness of statement.



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## THE STANDARD BOILER WORKS, SEATTLE

We take pleasure in giving some details of the work performed by the Standard Boiler Works, which we have obtained through the courtesy of Mr. G. F. Barritt, one of the proprietors of the works.

For the manufacture of new boilers, tanks, or sheet metal work of any kind, or to facilitate repair work, a large and commodious shop is fitted complete with the necessary machine tools, such as plate-rolls, punching and shearing machines, drill presses, bolt cutter and threader, etc., etc., while an overhead travelling crane traversing the full length of the shops serves to remove the work to the various machines, and is of sufficient capacity to lift the heaviest work. The plant being on the waterfront, vessels requiring repairs can come alongside a deep-water wharf, and so save much time and expense. A railway spur connecting with all the main lines also runs to the front of the works, so that land and stationary repairs, etc., may receive prompt attention. The writer noticed a locomotive and steam digger, both under repair, on the line, during his recent visit.

Probably, however, the most interesting part of the plant is the electric welding equipment, which is installed on board a large scow, and completely covered in by a commodious house to protect it and the other machinery from the weather. A special electric lighting plant is also installed, so that when the scow is towed alongside a vessel whose boilers require repair, and steam is therefore necessarily down, the scow can run her lines aboard, connect up to the vessel's switchboard and supply the current for lighting. A powerful air compressor is also fitted, which can be brought into requisition if necessary to operate pneumatic tools for drilling, caulking, riveting, or any other work that may be found needful. This complete plant may be towed to any point on Puget Sound to effect a hurried repair, which nevertheless is thoroughly permanent and efficient. A very considerable amount of boiler repair work has been completed in the most satisfactory manner by this floating plant, and at a great saving in time, labor and money. For instance, one can easily imagine the amount of work necessary in the ordinary way, to repair a cracked tube plate in a Scotch boiler, or a cracked header in a water-tube boiler, the latter usually requiring the removal of all the tubes in that header, the installation of a new one and the replacing of all the tubes; this is a very costly operation, and oft times delays a vessel's sailing; but, by the electric welding method the crack can be permanently repaired without the removal of any tubes, and roughly speaking, the repair can be effected in less than one-fourth the time and one-half the cost.

Mr. Barritt was kind enough to show the writer some specimens of electric welding, one a half-section of a two-inch tube welded into a portion of steel tube plate; the other, two small pieces of steel plate welded together; in each case they were perfect, and practically one piece. Among the numerous vessels whose boilers have been repaired by the foregoing process are the S. S. "Minnesota," S. S. "Jefferson," Lighthouse Tender "Aremeria," etc., and many others, as well as locomotive and portable boilers.

Although the above electric equipment is covered by United States patents, it will not be out of place to offer a few general remarks on electric welding which usually consists of joining two pieces of metal by sending through the joint enough current to heat the joined surfaces to welding temperature, and then pressing them firmly together, or otherwise filling up the joint with a special welding wire similarly heated, so that they may be made to cohere like solid metal, and many welding operations are economically performed in this way. The large current and the high joint resistance cause the development

of enough heat to raise the temperature to welding point in a very short time, and the power required varies inversely as the time consumed in making the weld, and to some extent on the metals welded. Comparatively little heat is wasted, 70 to 75 per cent of the power applied being utilized. Alternating current is generally most convenient because of the ease of its transformation. The frequency should not be over 50; the voltage required is low, depending on the nature of the work to be done; the current density is very high, that for copper welding (as in the fire-box of a locomotive) sometimes being as high as 60,000 amperes per square inch.

The Standard Boiler Works is located at 36 West Connecticut Street, Seattle, and they will at all times be glad to furnish estimates for new and repair work.

The Puget Sound Tug Boat company of Seattle, inform us that they have inaugurated a towage service at Willapa Harbor, having recently towed the four-masted bark, "Drummuir," to South Bend and return to sea, and the schooner "Stimson" to Raymond and return to sea. Their plans, however, for handling such towage business as may be secured by them at Willapa Harbor are not yet fully matured.

## COMMERCIAL MOVEMENTS AT SEATTLE.

## Deep Sea Vessels.

Arrivals—	No.	Tonnage
Steam .....	1,173	229,892
Sail .....	6	15,429
	123	245,321
Departures—		
Steam .....	115	215,407
Sail .....	10	20,249
	125	235,656
From and To—	Inbound	Outbound
Foreign and British Columbia .....	3,687	3,620
Coastwise and Alaska .....	2,070	3,590
Local Points .....	93,068	93,056
Total .....	98,825	100,266

## Imports.

From coastwise points .....	\$ 904,322
From Alaska points .....	97,456
From local points .....	678,337
From the Philippines .....	231,460
From Pacific Ocean .....	60,750
Total value domestic imports .....	\$1,972,325
From British Columbia .....	\$ 181,833
From Australia .....	2,053
From Germany .....	16,418
From France .....	6,266
From Scotland .....	1,127
From Ireland .....	1,360
From England .....	39,789
From South America .....	6,512
From Mexico .....	951
From Norway .....	6,660
From Denmark .....	1,028
From Sweden .....	214
From the Orient .....	1,618,048
Total value foreign imports .....	\$1,882,259

## Exports.

Shipped coastwise .....	\$ 507,751
To the Philippines .....	78,868
To Hawaiian Islands .....	72,597
To local points .....	513,842
To New York .....	184,508
To Alaska .....	863,414
Total value domestic exports .....	\$2,220,980

To British Columbia .....	\$ 767,242
To the Orient .....	754,498
To England .....	80,677
To South America .....	54,596
To Mexico .....	3,761
To Siberia .....	11,825
Total value foreign exports.....	\$1,672,299

## COMMERCIAL MOVEMENTS AT PORTLAND, ORE.

(Compiled by Merchants' Exchange.)

## Lumber Exports From Portland

(Foreign)

February, 1912	Since January 1st, 1912
Feet	Feet
6,820,527	\$ 71,487
10,935,000	\$ 114,818
	(Domestic)
	20,690,000
	\$ 212,367

## Wheat Exports From Portland

(Foreign)

February, 1912	Since January 1st, 1912
Bushels	Bushels
612,120	\$ 533,505
	(Domestic)
	1,469,206
	\$ 1,261,178

## Flour Exports From Portland

(Foreign)

February, 1912	Since January 1st, 1912
Barrels	Barrels
50,478	\$ 147,869
	(Domestic)
	198,162
	\$ 421,721
36,471	\$ 155,002
	(Domestic)
	70,155
	\$ 271,214

## Tonnage Entered at Portland

February, 1912—58 vessels.....	83,002 tons
February, 1911—61 vessels.....	92,037 tons

## Tonnage Cleared from Portland

February, 1912—59 vessels.....	88,277 tons
February, 1911—60 vessels.....	96,518 tons

TONNAGE MOVEMENT, PORT OF SAN FRANCISCO,  
FEBRUARY, 1912

Compiled by Merchants Exchange

	Steam Arrivals	Sail Arrivals	Steam Departures	Sail Departures
Coast .....	296,434	40,947	297,435	35,226
British Columbia .....	11,734	.....	29,710	1,043
Hawaiian Islands .....	21,623	1,043	24,684	865
Alaska .....	.....	.....	.....	.....
Europe .....	2,982	1,885	.....	.....
China and Japan .....	43,063	.....	37,781	.....
South America .....	31,837	.....	21,464	1,993
Philippine Islands .....	3,653	.....	3,745	.....
Australia .....	1,888	992	1,888	.....
Mexico .....	25,012	377	8,122	689
U. K. and Continent.....	.....	.....	6,878	.....
Eastern Ports .....	13,519	2,706	10,267	.....
Pacific Islands .....	.....	.....	.....	.....
Africa .....	.....	.....	.....	1,862
Various .....	.....	.....	.....	.....

## NEW STEAMSHIP LINE TO COLOMBIA

According to the Diario Oficial, published in Bogota, the charter of the Colombian National Steamship Company of Wilmington, Del., capital stock \$500,000, filed its charter with the Colombian government on December 18. This company has been organized to establish a line of steamships between the United States and Colombia, including also such other countries as may seem convenient, for the transportation of freight, passengers and mails. The original stockholders of the organization are J. C. Bolden, George H. Neilson and E. J. Sullivan, of New York, while the Colombian interests are represented by Alfonso Jaramilla, of Bogota.

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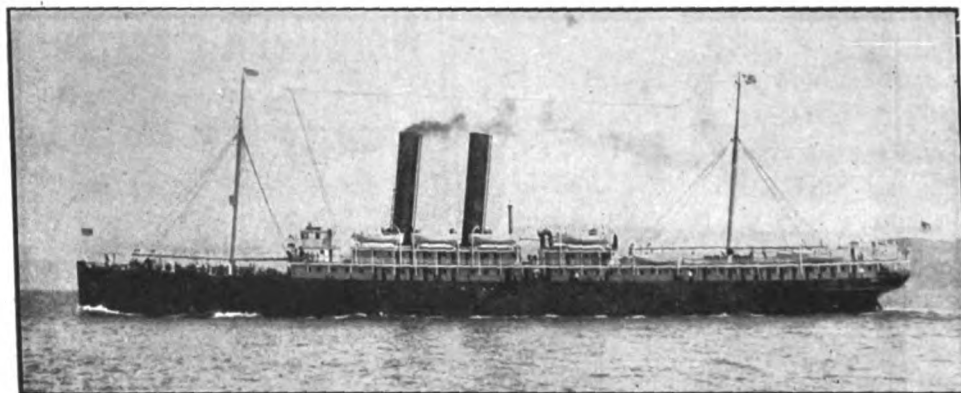
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## Announcement

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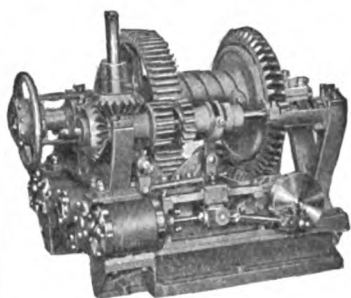
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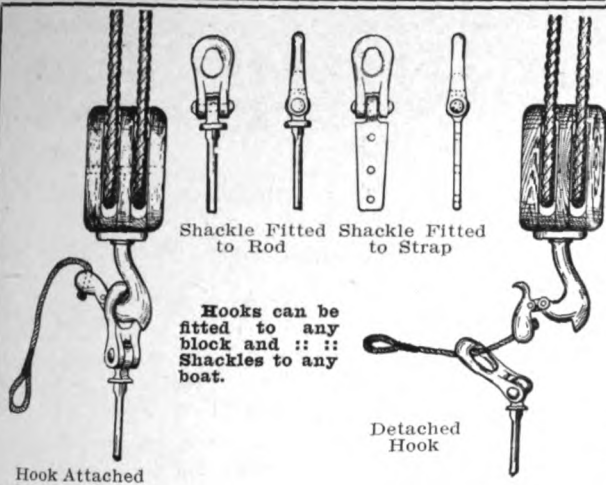
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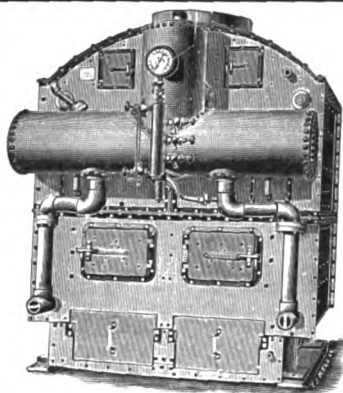
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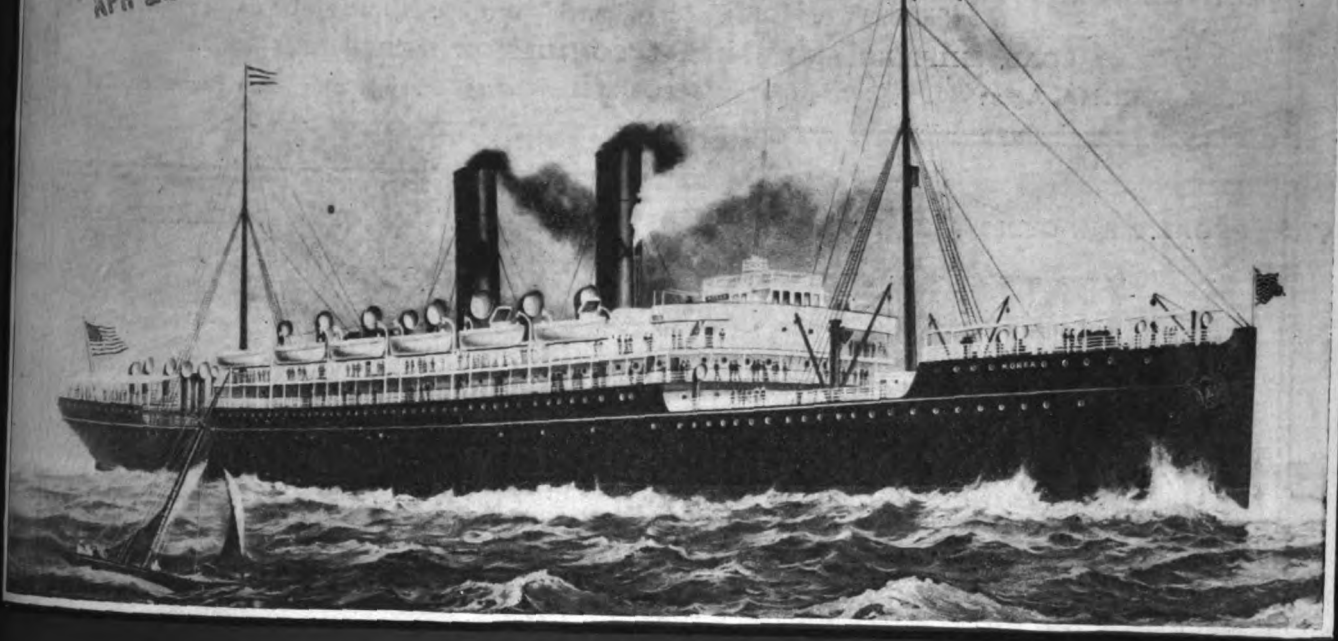
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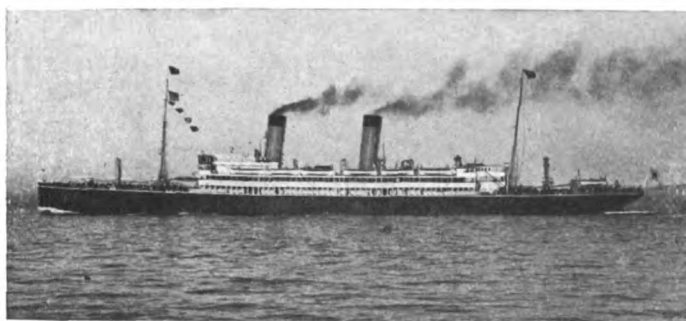
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# PACIFIC MARINE REVIEW

(Copyrighted April, 1912, by Pacific Marine Review)

VOL. IX

SEATTLE, WASH., U. S. A., APRIL, 1912.

No. 4

## EXEMPT AMERICAN SHIPS FROM PANAMA CANAL TOLLS

**P**ACIFIC MARINE REVIEW again urgently and strongly recommends that the American ship should be given its just dues in passing forever free through our Inter-oceanic Canal, built for and by the American people, of their money, and through their genius and enterprise, which other nations attempted but failed to accomplish.

The policy of free waterways is fundamental with the American people, hence Pacific Marine Review declares that this principle should be extended to both off shore and coastwise trade through the Panama Canal for American vessels for all and every class. We cannot too strongly protest against section 5 of the Bill of the Majority, to which Mr. Knowland, congressman of California, and a member of the committee on Interstate and Foreign Commerce, so splendidly and ably replies, as the "Views of the Minority," under the title of "Operation of Panama Canal," committed to the committee of the Whole House on the State of the Union and ordered to be printed to accompany H. R. 21909. Section 5 of the Majority Bill reads:

"No preference shall be given nor discrimination shown, directly or indirectly, to the vessels of any nation, its citizens or subjects other than vessels belonging to the government of the United States (including those belonging to the Panama Railroad Company) and the government of the Republic of Panama observing the rules and regulations of the Panama Canal."

Mr. Knowland says: "By this language, which is certainly clear and not open to misinterpretation, the United States is practically foreclosed from giving any preference, directly or indirectly, to American ships in the foreign or coastwise trades, for it provides that we may relieve from the payment of tolls only the vessels of the government of the United States and of the government of the Republic of Panama and of the Panama Railroad Company. The language amounts virtually to an interpretation in advance of the Hay-Pauncefote treaty adverse to the contention that this government can, directly or indirectly, favor American shipping through an American waterway upon which we are expending over \$400,000,000."

The message of President Taft sent to Congress in December has the true American ring, and clearly states the case. These are the President's words:

"I am confident that the United States has the power to relieve from the payment of tolls any part of our shipping that Congress deems wise. We own the canal. It was our money that built it. We have the right to charge tolls for its use. Those tolls must be the same to everyone, but when we are dealing with our own ships, the practice of many governments of subsidizing their own merchant vessels is so well established in general that a subsidy equal to the tolls, as equivalent remission of tolls, can not be held to be a discrimination in the use of the canal. The practice in the Suez Canal makes this clear."

The Secretary of War, on page 4 of his last annual report, is no less outspoken when he declares.

"Involved in the problem of fixing tolls is the question whether the United States has the right under the treaty to pay the tolls on American vessels using the canal. An examination of the treaty and the surrounding circum-

stances to my mind leaves no doubt as to the right of the United States, both legally and morally, to pay the tolls on its vessels. This is a perfectly recognized practice in respect to the tolls of the Suez Canal, the toll rules of which canal were adopted by the United States in the Hay-Pauncefote treaty for the government of the Panama Canal. At least one of our national competitors in the use of the Panama Canal, Spain, has already taken steps to provide for the payment out of her national treasury of the Panama tolls on one of the Spanish lines which will use that canal. Furthermore, I can see no difference, save in form (provided the tolls for other nations are kept reasonable, as we have also covenanted to do), whether the United States should make this appropriation out of her own treasury to American vessels, by receiving the toll money from them first and repaying it to them, or by simply relieving them from the payment of tolls in the first place."

Coinciding with these views are those expressed by the Secretary of Commerce and Labor on pages 102 and 103 of his last annual report:

"Every state in the Union with navigable waters crossing its boundaries furnishes precedents of congressional appropriations for the establishment and maintenance of improvements at the continuing expense of the federal treasury and without a dollar's help from the vessels which enjoy the advantages of such improvements. Where the future of American shipping is at stake, and the domestic commerce of both seaboards and the gulf is involved, there is no apparent reason to depart from a principle which has been so constantly invoked.

"The Panama Canal is being built in the belief that it will benefit all sections of the country and nearly every form of American industry. Our merchant ships and shipyards are as essential to the nation as our battleships. They have at least a claim to equal consideration in canal legislation and appropriations with other American industries. Every argument to tax the American merchant ship which uses the canal would apply with equal force to a tax directly on American cotton, lumber, fruit, coal, grain, and other cargo carried by the ship through the canal. It is feasible to use the canal for the promotion of American navigation in a manner consistent with treaty obligations, with precedent at home and abroad, and with our fixed policy of untaxed navigation on improved waterways."

The views of the state department are well known. The chairman of the committee on the Merchant Marine and Fisheries, in a recent report from that committee expresses views in accord with those above quoted.

We again quote Mr. Knowland:

"The Panama Canal is being built on territory which was purchased by the government of the United States. We will expend in its construction upward of \$400,000,000, and are obligated by treaty to pay the Republic of Panama in perpetuity the sum of \$250,000 annually. We occupy the position of sovereign proprietor of the canal and the Canal Zone, a relation that none of the nine powers signatory to the convention of Constantinople sustained with reference to the Suez Canal. The Hay-Pauncefote treaty should be construed in the light of these facts, and when



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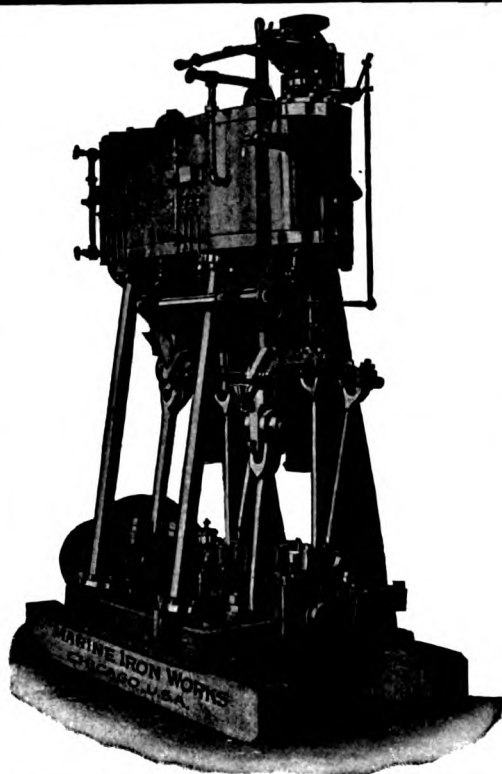
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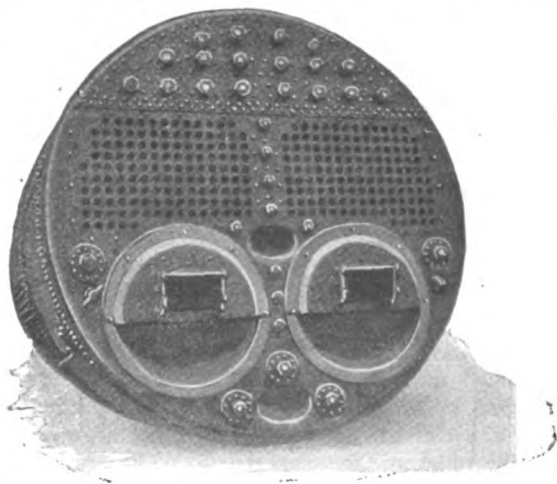
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so construed the minority can not escape the conclusion that in signing, ratifying and proclaiming this treaty to the world, we were merely agreeing to the terms and conditions upon which the United States, the sovereign owner of the canal, would permit its use by the other nations of the world, its citizens or subjects.

"We contend that no better opportunity was ever offered for the development of an American merchant marine and the establishment of a fleet of naval auxiliaries, which would be available in time of war.

"There is no doubt that the founders of the government and the framers of the constitution intended to provide for free and unrestricted commerce between the states. Certain it is that such has been our national policy from the beginning. It would be a cause for sincere regret to all lovers of this ancient institution if now, at the threshold of the opening of this great canal, fraught with such wonderful commercial possibilities to the American people, we should depart from the path that has so long been pursued."

In addition to this, we mention resolutions unanimously adopted by the National Rivers and Harbors Congress, the Boston Chamber of Commerce, the National Board of Trade, the Navy League of the United States, the Philadelphia Chamber of Commerce, the New Orleans Progressive Union, the New York Board of Trade and Transportation, the Merchant Association of New York, the Maritime Association of the Port of New York, Lakes-to-the-Gulf Deep Waterways Association, the delegation representing the civic and commercial bodies of the Pacific Coast, the cities of the Gulf of Mexico and the Atlantic Coast, the cities of Philadelphia, Newark, Trenton, Richmond, Buffalo, St. Louis, Cincinnati and Pittsburg, the various chambers of commerce of the Pacific Coast, the commercial bodies of the state of Washington, and the Central Labor Council of Portland, Ore.

These resolutions all should overwhelmingly indicate the public sentiment throughout the country, in favor of free tolls for American ships to be employed in the trade through the Panama Canal.

We can not comprehend that with such overpowering evidence of the peoples' will in favor of free tolls through the Panama Canal for vessels under our flag, only a minority is patriotically fighting, while the majority of the peoples' representatives oppose the passage of a bill on which so much and rightly so depends the realization of the long cherished dream for the necessary rehabilitation of our Merchant Marine, which in decades past was compelled to keep in obscurity on account of similar menace due to injudicious legislation.

With a view to obtaining the individual opinion of our friends in the United States Senate and House of Representatives, an application was addressed to several, the replies of which we take much satisfaction in quoting herewith:

United States Senator Geo. C. Perkins, writes:

"Relative to the maritime question of Panama Canal tolls, I would say that the question of canal tolls being now under consideration by the canal committee, of which I am a member, I shall do what I consistently can to favor the free passage of American vessels engaged in the coastwise trade."

Senator Joseph L. Bristow refers to his bill, S. 4861, which was read twice and referred to the Committee on Inter-oceanic Canals, and from which we quote section 3:

"That there shall be charged for the use of the canal by all vessels, other than vessels of the United States and vessels of the Republic of Panama, one dollar per net ton, charges to be based upon net registered tonnage, American measurement. The charge for vessels of American registry shall be fifty cents per net registered ton, American

measurement, and for vessels engaged in the coastwise trade of the United States 25 cents per net registered ton, if the owners agree that such vessels may be taken and used by the United States in time of war, upon payment to the owners of the fair actual value at the time of the taking. Vessels owned by the United States, engaged in commercial business shall be charged the same tolls as vessels of American registry that accept the foregoing proviso, but all vessels of the United States not engaged in commercial business, and all troops, materials, merchandise and supplies of every kind belonging to the United States shall pass through the canal free of charge. Vessels in ballast, without cargo, shall be charged 60% of the foregoing rates." Space does not permit the reproduction of this bill in full.

Congressman W. E. Humphrey, of Washington, expresses the following views:

"I think that every ship that flies the American flag engaged in the coastwise trade should pass through the canal free without any restriction of any kind. I believe that American vessels in the foreign trade should have rebated by the government to them any tolls that they are required to pay. I do not believe that this action on behalf of the government would violate either the letter or the spirit of our treaties with other countries. I look upon the argument made that such action would be in violation of our treaties as a mere pretext. I think the supreme court in an opinion rendered by Judge White, now chief justice, absolutely disposes of the question so far as the treaties are concerned with reference to the coastwise trade.

"So far as I know there are only two interests in the United States that are opposed to the above propositions, and these interests are the trans-continental railways of this country and the foreign steamship combine. It is a significant fact that so far as I have been able to ascertain not a single person appeared before the Interstate and Foreign Commerce Committee of the House at the hearings urging tolls for the canal. Notwithstanding this fact, however, the majority of the committee have reported in favor of giving no advantage whatever to the American ships. The solicitation of this committee for the railroads of this country has been truly pathetic. Unless we do give an advantage to American ships there will be little or no reduction of freight rates between the east and west coast, and from a commercial standpoint we will have constructed the Panama Canal almost entirely for the benefit of other nations. If foreign ships control the carrying trade through the canal the railroads will be satisfied, for they will understand that they can make combinations with reference to freight rates with this foreign steamship combine then as they do now."

Congressman Knowland, of California, favored us with a copy of the Minority Report in the question of Panama Canal tolls, submitted to Congress, from which extracts appeared in this article. He further adds:

"We are going to make a hard fight, and I am pleased to note that sentiment seems to be growing daily in our favor, and for the first time I believe we have a chance to win."

Congressman Sulzer, of New York, sends us the following:

"Your letter just received. I congratulate you and the Pacific Marine Review on the good work you are doing for our merchant marine.

"Regarding tolls through the Panama Canal, I am in favor of American ships flying the American flag going through the canal free. If any question arises as to the contravention of treaties, then I am in favor of refunding the tolls to American ships paid by them. In fact I am so much in favor of restoring the merchant marine that

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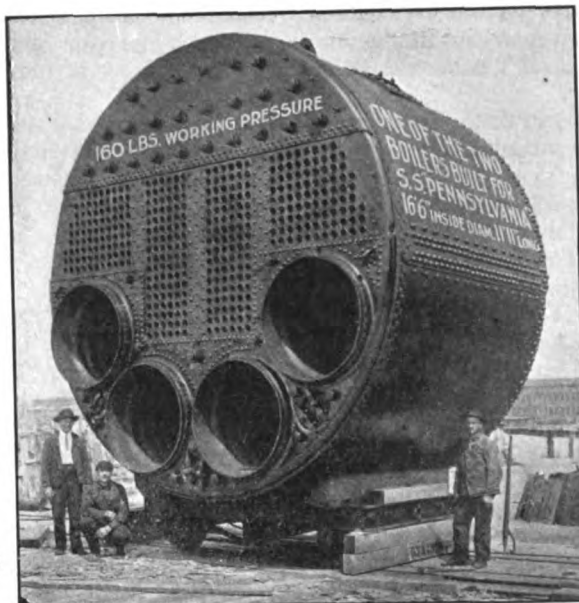
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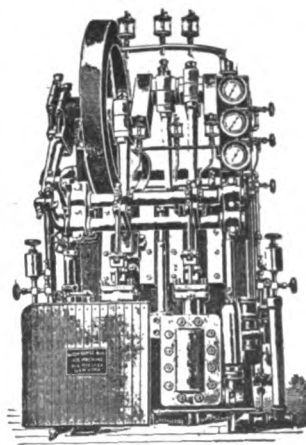
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"I am willing to do everything within my power."

Congressman Stephens, of California, replies to our letter as follows:

"I believe that coast to coast or coastwise shipping should have free passage through the Panama Canal, the same as in our rivers and harbors.

"I believe that American ships in foreign trade should

be charged small or no tolls.

"I believe that foreign ships should be charged such tolls as will secure a satisfactory share of interoceanic canal business.

"I believe that all railroad owned or controlled lines of ships should be barred from commercially using the Panama Canal."

## PANAMA CANAL LEGISLATION

I note that, according to press dispatches, the Interstate Commerce Committee of the House of Representatives has approved a bill giving the President discretionary powers to fix the canal tolls within a maximum of \$1.25 per ton, and a minimum sufficient to provide revenue to cover costs of maintenance and operation, which should include redemption of, and interest on, capital.

These tolls seem reasonable, but personally I regret that no preference is given to American registers, at least to American registers engaged in the foreign trade, a suggested and inherent preference which many of us have advocated.

I note that it is further reported that, "vessels owned or controlled by railroad companies and operated with intent to restrain trade, or engaged in any trust agreement, combine or conference, will be prohibited from navigating the canal.

Personally, I am opposed to these restrictions, which will be most difficult to reasonably and fairly administer in practice, but if such regulations are to govern domestic, that is to say, American shipping, it is imperative that such regulations equally govern foreign shipping, which will have a staggering effect upon the numerous combines and conferences which govern British, German, French and other foreign shipping.

For example, in order to carry out its edict forbidding the navigation of the canal to members of combines and/or conferences, the United States must close the route to the Royal Mail Steam Packet Company, London, which has now become the arch amalgamator and continues to pyramid steamship companies and which is a member of all important conferences; to the Hamburg-Amerika Company, Hamburg; to the Blue Funnel Line of Messrs. Alfred Holt & Co., Liverpool, who are members of the Suez Canal Conference, as well as most active exponents of the 10 per cent rebate, against which my good friend, Representative Humphrey of Washington, complains so bitterly, and whereby they have for years past tied up the exporters of canned salmon from British Columbia and Puget Sound; to the exclusion of other lines and other routes, in short, to almost every important foreign steamship company. To simply close the canal to domestic, that is United States, "combinations in restraint of trade" and to permit foreign "combinations in restraint of trade" to use the canal and to benefit in all the trade it will develop, would be to still further cripple American trade and navigation, and to place it in a more unfavorable position than over existing routes, a possibly ridiculous position which surely United States citizens at large will not tolerate. It is doubtful if, under existing treaties, the United States can prevent foreign conference lines from using the canal, and until such treaties are denounced it would seem as if the United States had built the canal for the benefit of the rest of the world, and that United States citizens must bear its vast cost, its vast burdens, and be hampered with innumerable restrictions in its use, which do not apply to competing foreigners.

I hope the domestic shipping interests of the Pacific Coast will ask and press President Taft, as well as the Democratic candidate for President, for a plain and non-

evasive answer as to whether they intend, and whether the President has authority at law, under existing treaties, to apply restrictions as to railroad control, combines, etc., applying to domestic shipping, equally to foreign shipping.

Throughout the world it has become fashionable and popular to regard the United States as the home of trusts, combines, skilful manipulation, etc., but I venture to state that, as inspection of the public records at Somerset House, London, will prove that there is far more actual and skilful control of finance, industry, trade and commerce, in London under the Companies Limited Liability Acts than in New York, and that skilful control, manipulation, division of spheres of interest, etc., is in London and in Europe generally, a skilled and established science compared to crude production in New York.

Undoubtedly the fact that these great combinations in the United Kingdom cannot, as in the United States, further shelter themselves behind a tariff wall, makes their existence less apparent and a little less oppressive to the public, than in the United States, and in other countries with excessive tariffs.

London, March 29th, 1912.

H. B. JAYNE.

### THE HAMBURG-AMERICAN LINE AND PANAMA CANAL.

Advices from the office of the Hamburg-American Line, Hamburg, Germany, inform us that this company is building a large cargo and passenger steamer of about 19,000 tons to be operated from New York to Valparaiso via the Panama Canal. Plans have not as yet been made to extend the service of this vessel to ports of the North Pacific. As to the contemplations of this company in connection with the Panama Canal, in a letter addressed to Pacific Marine Review, dated at Hamburg on March 14, we have received the following information:

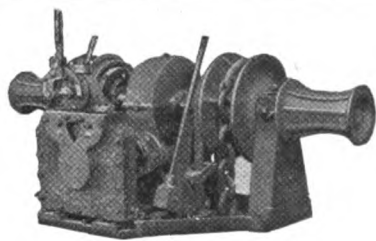
"We cannot as yet say anything certain, whether and in which manner we will establish services through the canal. For a number of years we have had a very close working arrangement with the Kosmos Line, who already, as you know, serve the entire west coast of North and South America with frequent and regular sailings. A number of our own steamers are running under our own flag in this service, and if the Kosmos Line decides to let some of their services pass the Panama Canal, this will, of course, also refer to those steamers which we have running in the Kosmos service. The time of the opening of the canal is still so remote that we cannot at the present moment make any resolutions to this effect."

The Terry Steam Turbine Company of New York announce that they have made the following sales for marine service:

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Oceanic Steamship Company, steamships "Ventura" and "Sonoma," San Francisco, Cal.—Two 100 h. p. 2,600 r. p. m. Terry turbines direct-connected to Jeannesville 450 g. p. m. boiler feed pumps. (This order was placed after installing and testing similar equipment on the "Sierra.")

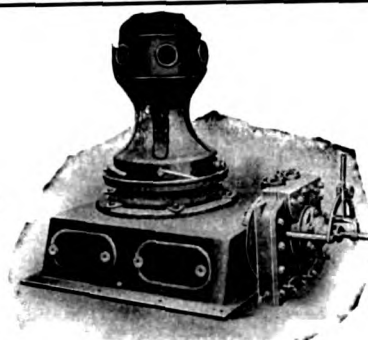




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HEATED AREAS IN PANAMA CANAL ZONE  
EXPLAINED BY THE CANAL COMMISSION  
GEOLOGIST

**A**BOUT two months ago, rumors of seismic disturbances in the Canal Zone circulated with lightning rapidity throughout the country and finally revealed the fact that heated material on the west side of the great Culebra Cut had been actually discovered, causing at first no little anxiety to all interested in our country's most important maritime undertaking. However, the Canal Record of March 6, 1912, containing the report of the Canal Commission's Geologist, Mr. D. F. McDonald, who was recommended and requested to make a careful examination, soon dispersed all anxiety and sufficiently explained the phenomenon of surface heating to a depth of about 15 feet and escaping steam from numerous small openings and from four principal vents or openings, the smallest of the four about 3 inches in diameter and largest about 1 foot.

We herewith reproduce this interesting report in full:—  
Ed Note.

"The marl shales, through which Culebra Cut extends, in the region opposite the Culebra railway station, have, from time to time, on exposure to the atmosphere, become hot. The intensity of this heat has varied from noticeably warm to a temperature sufficient to readily char wood, without, however, causing it to burst into a flame. The duration of this heating has been from a few days to several weeks. These shales are dark, thin bedded, soft, and easily crumbled, and some of the layers are largely fine basic tuff, or volcanic ash, loosely cemented by lime. Other beds contain more carbonaceous material, with some local partings of lignite, an inch to a foot or more thick. The most easily weathered minerals of which these rocks are composed have been but little acted on by the atmosphere, and this, together with their composition, is evidence that they were derived from nearby volcanic mountains, and deposited as a succession of thin beds in a shallow estuary of the sea, which extended across the Isthmus at that time. That this material was originally deposited in water is known from its clearly stratified condition; that the water was shallow is evidenced by fragments of fossil plants and thin beds of lignitic shale, indicating swamp conditions, which are inter-bedded in it; and that the water was an arm of the sea is demonstrated by the fossilized marine animals, such as oysters, corals, pelecypods, and foraminifera, which it contains. The time when these conditions existed is known in geology as the early Tertiary or Oligocene period of earth history, and the fossilized animals of that period have certain specific marks, by which the specialist may distinguish them from animals of earlier and of later time.

"After exposure to the atmosphere by drilling, or blasting, certain local areas of this formation become, in the course of a few days, warmed up, and as the heating goes on the carbonaceous matter in the shales is gradually oxidized off and they tend to assume a gray to dull reddish color. The first working hypothesis entertained, in looking toward a solution of this heating phenomenon, was that possibly the heavy blasting had furnished heat enough to break down the calcium carbonate present to the oxide form, and that ground water and atmospheric moisture reacted on this to slake it and thus probably generate sufficient heat to start the oxidation of the carbonaceous material. This hypothesis was, however, rendered untenable by three lines of evidence:

"(1) The heating was much more local than the calcium carbonate, and the carbonaceous matter.

"(2) The heating bore no definite relation to the lime and carbon content of particular beds.

"(3) Colonel Gaillard has observed that in some instances the heating began in the holes some time after

they had been drilled, but before the ground had been blasted at all.

"The most aggravated case of heating so far noted is in the Culebra Cut, about 350 yards north of the foot of the stairs at the observation tower near Culebra Station. The mass of heated ground here is about 500 feet long by 20 feet wide, and the action reaches a depth of perhaps 15 or 20 feet. Blue smoke, which contains a high percentage of sulphur dioxide, issues from vents in the mass, and fragments of wood inserted in these are readily charred and consumed. A small amount of steam may also be detected emanating from local moist spots, but this is mainly due to the vaporization of ground water. In the investigation of this heated mass samples were taken, and these were tested qualitatively for sulphuric acid and for sulphates of calcium, aluminium and magnesium. The tests were made by Mr. Jacob of the Hospital Laboratory Staff at Ancon, and they revealed the presence of all of the above substances both in the shale and as the white coating on the moist spots and steam vents of the mass. The yellow deposit near the larger vents is sulphur. Sulphuric acid, especially, was shown to be present in considerable quantity. The origin of the sulphuric acid here was at first a puzzle, because the examination of many samples, with the naked eye and with the microscope, failed to reveal the presence of pyrite. Finally samples of eight to ten pounds were taken, ground with water in a large mortar for some minutes, and then concentrated to a few ounces by washing or 'panning.' This concentrate showed a high content of pyrite, much of which could scarcely be seen with the naked eye. Under the microscope very small crystals of pyrite were noted; also considerable magnetite, present as black sand, and some sub-angular to fairly rounded grains of quartz.

"The mainspring of the action here, then, as in the other instances observed, has undoubtedly been the oxidation of the pyrite.

"As the temperature rises all chemical activity is vastly stimulated and the heating increases to a maximum. After the most readily oxidizable substances are consumed the heat gradually dies down toward normal temperatures, which may be reached in a few weeks or months. The intensity and duration of the heat depend largely upon the percentage of finely divided pyrite, volatile matter, and fixed carbon in the rocks.

"In order to alleviate the danger of premature explosion from loading dynamite in holes which have become hot, Colonel Gaillard has inaugurated the practice of testing holes in the vicinity of the heating areas, by dropping into them a small iron pipe longer than the hole. This is withdrawn at the end of ten minutes and quickly passed through the hand. In this way not only is heating detected but the location of the heated zone with respect to the depth of the hole is also made known; for the heating is at times only local and may be at, or well above, the bottom of the hole.

"Certain geological considerations have been suggested by a study of this heating phenomenon, chief of which are:

"(a) Chemico-thermal springs. Whenever jointing, fissuring or change of groundwater level gives free access of oxygen-bearing surface waters to beds which contain the necessary finely divided pyrite and carbonaceous matter, a heating up of such beds is likely to result. Groundwater flowing over such heating beds, and coming to the surface in the general vicinity of them, would constitute thermal, or hot, springs.

"(b) The very fine pyrite sparingly disseminated through the carbonaceous shales, herein described, seems to have resulted from the action of sulphur, from decaying animal and vegetable life on the ferro-magnesian silicate fragments which are abundant in these sediments."

## FOREIGN INTEREST IN PANAMA CANAL

## South American West Coast

The commercial and industrial interests of the west coast of South America are expecting great things following the completion of the Panama Canal and are actively getting ready for the event.

It is reported that the *Compania Sud-Americana de Vapores*, of Valparaiso, is about to build six large steamers to ply between Chilean and United States ports via the canal, and other steamship lines are preparing to change the routing of their vessels. Commercial houses here are increasing their capacity and making new connections with American exporters, so as to be in line for the rush and it will be well for American firms to grasp fully the situation and to avail themselves of the full benefit of this opening for American business.

## British Comment

The *Daily News* of London, England, states:

"Panama is going to alter the world's trade routes to the great advantage of the world in general, but for the special advantage of the American nations. The matter is of profound importance to Britain, because Britain has so many of the world's ships, and therefore so much of the world's carrying trade. \* \* \* It was a geographical discovery that ruined Venice. I am not suggesting that any such ruin could be wrought to Britain and her shipping by the Panama Canal, but it is very important for us to bear in mind that we possess an absurdly disproportionate share of the world's carrying trade, and that it is largely American folly which has given us that disproportionate share. We must not suppose that the United States will forever be so foolish as to pursue a policy which makes it impossible for her to develop a great mercantile marine; and the Panama cut, because it will accentuate the existing American folly, is very likely to bring about alterations in American commercial policy which will restore to the United States the use of the great national advantages for shipping which she possesses. America possesses a magnificent geographical position, facing the two great oceans, and when her Atlantic and Pacific seaboard are for practical purposes made one, that position, whether for purposes of peace or war, will become a hundred fold more valuable."

## WESTERN WOMEN'S VIEWPOINT ON PANAMA CANAL TOLL ISSUE

IT IS somewhat unusual that a marine publication should find good cause to insert in any of its articles the, to man, sacred term "women." On March 22 a journal under the title of "Western Women's Outlook" came to our notice as a weekly periodical devoted to social, educational and civic betterment, edited by ladies of Seattle, and Tacoma including officers and advisory board, all of high reputation and standing.

Two articles attracted the particular attention of this publication, which we herewith reproduce, as both are of considerable interest to *Pacific Marine Review*. Although we cannot coincide in all respects with the views taken therein, we, nevertheless, admire the interest and courage of our western women, giving splendid proof of their progressiveness in commenting upon so vital a problem in our country's maritime affairs as the Panama Canal toll issue is.—Ed. Note.

## Questionable Tactics

The House Bill, now before Congress, providing for the operation of the Panama Canal, is not only a keen disappointment to a great majority of the people, but it is also

somewhat mysterious. Heretofore nearly all the bills originating in the present House present traces of efforts to make "political capital" on the part of the framers, but the measure under discussion would certainly seem to nullify whatever political advantage that may have been gained by the former acts of the Democratic majority.

There is a strong desire on the part of the public to revive American shipping, and the current opinion seemed to be that the Panama Canal would be the means of doing so. The thought presents itself that, considering the fact that American capital, American courage and American labor built the canal, it would be nothing more than equitable than that foreign vessels using the waterway should be made to pay the operating expenses. But the proposed House bill shatters that dream. By its provisions American vessels will have to pay the same rate of tolls assessed against foreign ships.

Of course it is perfectly plain that railroad influence and not political capital inspired the measure. The free use of the canal to American shipping would compel the trans-continental railways to compete with steamship traffic on equal terms, but the handicap of the proposed canal tolls would give an unsurmountable advantage to the railways.

But, of course, there is a joker; the clause barring unlawful and criminal railway corporations from using the canal for their connecting lines of ships, is a direct slap at the Southern Pacific. It is a well-known fact that the so-called Harriman system has been and is the chaperon and wetnurse of the present administration, just as the Great Northern was the guardian of the Roosevelt regime. It may be that the House committee which originated the bill did so with a view of compelling the President to veto it; but it would seem that the kickback from such a gun would result in greater injury than any execution the bill might do.

## The People Versus the Man

Under a real democracy the matter of operating the Panama canal and fixing the rate of tolls would have been referred to the people for settlement instead of being left to the President. The people of the United States, being inclined to look at things from a business viewpoint, would have unquestionably regulated the payment of tolls and provided for the expense of operation so that American shipping would have derived some advantage over their foreign competitors. On the other hand, the President, notwithstanding the facts that the people supplied the money to build the canal, did the work and are paying the interest on the bonded indebtedness, for reasons of sentiment, or, perhaps, more personal motives, will actually place a handicap on the commerce of the nation.

## DOCK AND WHARF CONSTRUCTION IN B. C.

Twenty-five per cent of the following sums will be spent by the herewith-named companies for docks and wharves in British Columbia: Vancouver Dry Dock & Shipbuilding Co., Vancouver, B. C., \$1,214,150; British Columbia Marine Railway Co. (Ltd.), Esquimalt, B. C., \$3,000,000; Grand Trunk Pacific Railway Co., Prince Rupert, B. C., \$2,000,000; Esquimalt Grading, Dock & Shipbuilding Co., \$2,637,800.

The President of the State Board of Pilot Commissioners at San Francisco reports that the rate of pilotage at this port since 1895 has been reduced to \$3.00 per foot draft and 3c per ton for each and every ton registered measurement. All vessels sailing under an enrollment and licensed and engaged in the Coast trade between the Port of San Francisco and any other port of the United States are exempt from all pilotage unless a pilot be actually employed.

# HOLLAND AS A COMMERCIAL AND MARITIME POWER

(By CHARLES VORNHOLT)

POPULATION 6,000,000; AREA 12,648 SQUARE MILES

**F**EW Americans realize the importance of the position which Holland (or the Netherlands, as the official name should be) occupies as a commercial power. As a matter of fact, that country's very existence is only known in a general, vague way, very often coupled with the impression that it forms part of Germany! That Dutch and German are two entirely different languages, spoken by two different nationalities absolutely independent of each other, will never be clearly brought home to the American mind. And that Queen Wilhelmina of Holland rules over nearly fifty millions of subjects will also come as a surprise to many.

The following statistics will show that Holland, whose possessions in the East and West Indies make it rank second to England only as a colonial power, is easily the first of the so-called second-class powers, and in many respects takes an honorable place among the first-class powers.

If one bears in mind that Holland is the only country on earth the soil of which contains no minerals whatever, and only a small supply of coal, and which therefor absolutely lacks the natural resources of other countries, it is plain that if the absolute figures command respect, the per capita figures are little short of stupendous and form an eloquent testimony to the Hollanders' business ability, energy and enterprise.

## Imports and Exports, 1908

Great Britain and Ireland—	
Imports	\$2,964,767,435
Exports	2,283,637,605
German Empire—	
Imports	2,075,475,000
Exports	1,754,650,000
United States—	
Imports	1,194,341,792
Exports	1,860,773,346
France—	
Imports	1,144,600,000
Exports	1,118,220,000
Holland—	
Imports	1,129,496,000
Exports	872,422,800
Belgium—	
Imports	665,500,000
Exports	501,380,000
Russia—	
Imports	489,705,000
Exports	531,235,000

## Shipping

The number of vessels using the Suez Canal for the years 1910 and 1911 are as follows:

	1910	1911
England	2,561	2,778
Germany	600	635
Holland	251	259
France	231	240
Austria-Hungary	148	191

The foreign clearings for the year 1910 for the port of New York, according to the annual report of the Chamber of Commerce, show the following figures:

Country—	N. R. Tonnage
Great Britain	4,065,232
Germany	1,651,909
Italy	1,176,421
Holland	874,093
France	659,171

With only two of its steamship lines receiving a very moderate government subsidy, Holland, notwithstanding fierce competition of heavily subsidized foreign lines, easily takes the eighth place, as follows:

Country—	G. R. Tonnage (Steamers)
Great Britain	18,122,071
Germany	3,893,287
United States	1,955,154
Norway	1,533,441

France	1,471,333
Japan	1,202,458
Italy	1,040,376
Holland	1,011,227
Russia	824,100

That these figures are very conservative is shown by the following schedule, as well as by the shipbuilding statistics. It is only a question of a few years that Holland will pass Italy, Japan and France.

## Growth of the Principal Dutch Steamship Lines

Company—	Number of Vessels		Gross Registered Tons		Increase
	1902	1912	1902	1912	
Netherland SS. Co.	17	33	65,000	182,000	180
Holland America Line	10	16	85,000	177,000	110
Rotterdam Lloyd	15	25	49,000	132,000	165
Royal Packet SS. Co.	41	77	53,300	131,000	145
Royal Holland Lloyd	4	11	16,800	79,200	360
Royal Netherland SS. Co.	30	42	27,600	65,700	140
Royal W. Indian Mail	9	15	15,400	39,000	155
Muller's Genl. SS. Co.	6	12	15,000	28,800	90
Zeeland SS. Co.	7	8	12,400	21,300	75
Baltic SS. Co.	6	9	11,200	16,000	40
Java-China-Japan Line	..	8	..	41,400	..

Totals .....145 256 350,700 913,400 260

That the above figures are a sure sign of the rapidly increasing prosperity of the country is borne out by the following official government statistics, showing the revenues since 1902 (1 florin equals 40 cents):

	Florins
1902	144,049,346
1906	160,439,269
1909	169,114,515
1910	176,528,728
1911	184,151,113
1912 (estimated)	190,851,113

To which the following significant remark is added: "In view of the foregoing, the question arises, if it would not be better to think twice before giving up the system of free trade and take the great jump in the dark towards protectionism." Like England, Holland is a free trade country, and, with figures like the above, it would indeed be hard to defend a protective policy. In this age of tariffs it is refreshing to notice this.

## Shipbuilding

According to "Lloyd's Register," the world's tonnage constructed during 1911 is shown by the following figures:

	Tons
Great Britain	1,803,844
Germany	255,532
United States	171,569
France	125,472
Holland—	
Inland	20,000
Ocean	93,050

Japan	113,050
Austria-Hungary	44,359
Norway	37,836
	35,435

The estimate of 20,000 for Holland's inland shipbuilding is wide of the mark, Dutch statistics showing a tonnage of not less than 254,000 for the year 1911, or more than twelve times the estimate given by Lloyd's Register. Not less than forty-one steamers, with a tonnage of over 200,000, will be completed in 1912, of which amount 20,000 tons alone come for account of the Royal Holland Steamship Company's seven new steamers ordered built. To such an extent are the shipbuilding yards taxed with new orders that two new steamers for the Royal Holland Lloyd of 14,500 tons each, had to be ordered in England, where, moreover, a 32,500-ton steamer for the Holland-American Line is building. Holland is entitled to the second place as a shipbuilding nation.

## Other Industries

The popular belief that Holland, besides building ships,

only produces cheese, fish, flower bulbs, gin and, last not least, the famous "wooden shoes," will receive a rude shock upon learning that industries of all kinds flourish there, sending their products to many parts of the globe, while the excellent workmanship of the various articles produced has enabled them to successfully compete with similar articles of other countries. Lack of space does not allow to go into further details.

The Royal Holland Lloyd, or South American Line, ever since its foundation a few years ago, had been hampered by a combination of mostly German lines, who even offered to buy the line at a high figure. Stung to the quick by this offer, the financial reorganization was at once undertaken, and with the aid of the government, the Netherlands Trading Company and the Twentsche Bank, the company today occupies a strong position in the South American trade. Two new steamers, of 14,500 tons each, are building in England.

The Holland-American Line is another example of sound business judgment and able management. The only unsubsidized trans-Atlantic line, it has nevertheless grown steadily, and now has passenger and freight steamers running between the principal American and Canadian Atlantic ports, to and from Rotterdam, which service, upon the opening of the Panama Canal, will be at once extended to the west coast of both North and South America. Dividends have been paid every year without exception, as high as 15 per cent in 1910, after large amounts had been written off for depreciation or added to the reserve fund. Its fleet is systematically rejuvenated and enlarged, a 32,500 ton steamer being now under construction at Harland & Wolff's, Belfast. The market value of its shares today is around 185 per cent.

The International Tug Company, with headquarters at Rotterdam, enjoys a world reputation for towing drydocks, dredges and other large and unwieldy material to all parts of the world. Its high-powered ocean-going tugs are practically "all engine," and a trip through the Suez Canal to India or to South America, with a 15,000 tons dock in tow, is nothing uncommon for them.

Rotterdam, Holland's principal shipping port, is also the world's fourth largest seaport, being only surpassed by London, New York and Hamburg. Its total net registered tonnage for 1911 was 11,194,051, against 10,836,643 for 1910, an increase of over 10 per cent. Antwerp was passed in 1910, and at the present rate of increase the day cannot be far off when Rotterdam will be the world's foremost shipping port. With the completion of the new Waal Basin, for the construction of which 53,000,000 cubic yards of material will have to be removed, 875 acres of water will be added, with 20 miles of quays, docks, etc., making Rotterdam the largest artificial harbor in the world. Thanks to an energetic municipal government, it is fully ahead of the times, and no efforts or money have ever been spared to keep it there.

Amsterdam, the country's capital (not The Hague, as it is generally understood), is the center of Holland's commerce. The North Sea Canal (completed 1873) connects it with the North Sea, a canal only surpassed in size by the Suez Canal. Its new 1,000 feet lock will be the largest in the world, and the two immense swinging railway bridges that cross the canal near Amsterdam and near Haarlem are also the largest swinging bridges in existence. No efforts or money are spared to keep both the canal and the harbor of Amsterdam fully up to the ever-increasing demands of modern shipping.

Amsterdam is one of Europe's foremost produce exchanges, a world market for tobacco and other products from East Indian Colonies, the greatest exporter of diamonds, especially to the United States, the most important financial center after Berlin and Frankfurt, and the heav-

iest buyer of American securities after London. The giant combine known as the Royal Dutch-Shell, successful competitors of the Standard Oil Company, is controlled in Amsterdam.

#### The Colonies

As a colonial power Holland ranks second to England only. Netherlands India (Sumatra, Java, the greater part of Borneo, Celebes, the Moluccas, the Sunda Islands and part of New Guinea) covers nearly 720,000 square miles, sixty times larger than the mother country, and has a population of over 40,000,000. Java is fully developed, with nearly 4,000 miles of railroad. Its capital, Batavia, and its main shipping port, Soerabaya, are large and prosperous cities. The exports to Holland amounted to over \$200,000,000 gold in 1908, and have since increased hand over hand. The fleet of the Nederland Steamship Company and of the Rotterdamsche Lloyd maintain a weekly service with the motherland, whereas the Royal Packet Steamship Company (Dutch), with its fleet of 72 steamers, provides for the carrying of the mail and cargo between the various islands. A vivid picture of the beauty and importance of this Indian Empire is drawn in Arnold Wright's "Twentieth Century Impressions of Netherland's India" (London, Lloyd's Greater Britain Publishing Company).

Holland's possessions in the West Indies, Dutch Guiana and Curacao are of small importance.

Even an incomplete and brief sketch, as the above must necessarily be, cannot fail to show that Holland, as it is today, is a successful, prosperous and wide-awake country, full of life and energy, and whereas it does not aspire to reach the same height as it did in the seventeenth century, when it practically occupied the same position as England holds nowadays, it occupies an honorable place among the nations of the world, and the next decade will see it rise still higher. And if one considers that not less than five Nobel prizes have been awarded this wonderful country, the proof is given that the material prosperity has not been accomplished at the expense of the intellectual civilization.

#### CANADIAN LOANS IN LONDON

The principal feature of the English loan market for the last five or six years has been the investment of money in Canadian enterprises. The undertakings have been varied in their character, covering government and municipal projects, railways, mines, timber lands, and new and existing industries.

During the past seven years the borrowings of Canada in London aggregated \$857,658,659, the total for 1911 being \$191,957,963, which was the largest amount borrowed in any one year, with the exception of 1909.

In the table below is a statement of the Canadian loans effected in London, together with their objects, in 1909, 1910, and 1911:

Loans.	1909	1910	1911
Government .....	\$ 69,773,443	\$ 53,531,500	\$ 9,246,350
Municipal .....	10,265,881	14,985,900	25,904,379
Railroads .....	85,770,252	39,992,897	83,325,444
Financial .....	.....	5,624,510	12,206,399
Mining .....	5,355,846	20,225,583	2,919,900
Land and lumber...	2,919,900	25,985,163	20,002,146
Industrial .....	19,707,456	12,642,422	38,293,345
Total .....	\$193,792,778	\$172,987,975	\$191,957,963

As many schemes are under consideration by the Canadian Government, some of them of large moment, it is believed that there will be an increase in government borrowings in London in 1912. It is thought also that, in view of the rapid development of the Dominion and the growth in consequence of some of the older towns and the establishment of many new ones, the municipal loans which will be floated in London in 1912 will probably show an increase over 1911.

## BUSINESS AND FINANCIAL OUTLOOK

**R**EASSURING advices are still being received from the important mercantile centers concerning actual business conditions. These indicate that while the country is by no means doing the volume of business that has frequently been handled at this season, conditions nevertheless reflect material improvement over those existing a year ago. Increased volume of bank clearings, an extraordinary reduction in the idle car surplus, the much better demand for copper, the operations of the great department stores in various cities, and the confidential reports from many of the most prominent mercantile corporations, tell of sustained recovery in various branches of business. In spite of this progress, however, the attitude of business men is still conservative, and there is little disposition to take up new enterprises until the labor situation has cleared sufficiently to indicate that the country is not threatened with alarming strike disturbances. People are unquestionably more hopeful and, in contrast with the uncertainty and pessimism which existed a few months ago, there is today much greater confidence felt about the future.

There has been some hardening of time money rates, and although the demand is still below normal, there is reason to believe that the inquiry for money from mercantile sources will soon become much more of a factor in the money market. Business men usually borrow rather heavily in April, and because of the limited stocks on hand it seems probable that the inquiry from these sources will expand as spring business develops. There have been further large advances made by Wall street banks to borrowers in London, Berlin and Paris, and the assistance rendered by banks here has been a material factor in relieving the strain at Berlin. The credits represented by these temporary advances to foreign borrowers and to foreign banks are now very large and will afford undoubted protection to the Wall street money market later on should it become desirable to import gold during the summer or fall. This is one of the strongest elements in the situation since recourse is possible not only to the credits created through our foreign loan operations already described, but to those represented by the international trade balance of virtually half a billion dollars. To an unusual degree, therefore, the course of foreign exchange will be controlled this year by the disposition made of these foreign credits and the attitude of Europe toward paying off the outstanding loans as they mature.

Revival of speculation at New York has not yet reached the point where it is imposing serious burdens upon the banks. There is still plenty of money for legitimate borrowers, but it must be remembered that April is ordinarily a month of heavy financing, when large bond issues are brought out. Important offerings of this character may be expected in the near future, as the bond market is gradually getting better and a great deal of quiet investment is going on. That the banks are today finding more profitable employment for their loanable funds through advances to their own customers, or through the purchase of commercial paper, is illustrated rather strongly by the disclosures of the report just given out by the Comptroller of the Currency covering the condition of the national banks on February 20 last. While the Comptroller's figures show that the banks increased their security investments (other than holdings of United States bonds) during the thirteen months' period between January 7, 1911, and February 20, 1912, in the sum of \$114,787,000, the gain shown in that item for the eleven weeks between the

calls of December 5, 1911, and February 20, 1912, was only \$2,390,000. It is evident, therefore, that the banks are not now buying securities on the scale that they were and that some of the institutions are reducing their holdings in order to secure profits and making heavy advances to borrowers in the money market.

During the ten or twelve weeks which will elapse before the national conventions are held political discussion will become the order of the day. Campaigning for the nominations by rival candidates in both parties is already in full swing, and the strife is likely to become more pronounced as the day for holding the conventions approaches. It may be doubted, however, whether general business will be seriously impeded by these developments beyond the temporary interruption that is inevitable in a presidential year. The country is in an exceptionally strong position to face the pending struggle, and it is noteworthy that people are inclined to take a more sane view of business questions and of the issues involved in the relation of the great industrial enterprises to the government and to the public in general. The acquittal of the packers at Chicago, the reaction in the South against discriminatory legislation against the railroads, and the evident desire of business men everywhere to conduct operations in accordance with law and so avoid conflicting with the government authorities, are among the signs which suggest a genuinely better sentiment.

The financing incident to the April 1 payments was arranged with the utmost ease and with no development in the money market to indicate that the disbursement of more than \$150,000,000 in the quarterly dividend and interest allowances was being made. In the closing days of March there was heavy lending to Europe by our banks at rates which were considerably above those bid in this market for similar accommodation. Some of the large bond issues are likely to be offered during April, and it seems clear that these will be successful if the securities are sold at a price which will enable the holder to obtain something like 4½ or 5 per cent on the investment. There have been further issues of short term notes, and as conditions stand today the market for short term obligations is sufficiently broad to absorb much larger issues should they be decided upon later on by corporations which had intended to issue bonds. So far we have sent nearly \$9,000,000 in gold to Argentina and about \$12,000,000 to Paris. It is altogether probable that further shipments to Buenos Ayres will be made and that considerable gold may be ultimately required by the European markets should the tension become more acute at Berlin and Paris.

Fortunately for all the great markets the striking coal miners in Great Britain may soon be back at work again. The hardships of that struggle have been more serious than people here realize. Heavy shipments of currency from London have been called for and it is probable that the English market may obtain some gold in New York later on. The differences between the anthracite miners in this country and the coal operators will probably be adjusted in time. The outlook, therefore, favors continued optimism, with a gradual, though sustained, recovery in many branches of business. The country is too rich and the crop prospects too reassuring to suggest that general business conditions are to be permanently depressed by the uncertainties attending the presidential campaign.

THE FOURTH NATIONAL BANK  
New York, April 1, 1912.



## GERMAN "KOSMOS" STEAMSHIP COMPANY, LIMITED, HAMBURG

(TRANSLATED FROM THIS COMPANY'S GERMAN REPORT)

Annual report for the year 1911, and intended for the 39th ordinary general meeting of shareholders, to be held in Room 14, Exchange Hall, at 2:30 p. m., on the 26th of March, 1912.

We beg to submit the result of the year's working for 1911, showing a profit of £260,759.13.0. After careful valuation of our tonnage, we propose to write off for depreciation £115,400.7.11. Having regard to the various relations of our trading, and following the example of other shipping companies we have decided to establish a "contingency account," and have endowed same with the sum of £48,889.16.10. The board have decided to pay a dividend of 12 per cent., which is equal to Mks. 120 per share.

In the year under review, 82 round voyages have been completed, whereof 18 were to Chili, 32 to Peru, 12 to Ecuador, 4 to Central America, and 16 to California; in addition to this, we were able to charter five of our vessels at different times. All voyages were completed without any casualties or serious damage, so that our insurance reserve account shows an increase of £55,880.10.5, which must be regarded as very satisfactory. The steamer "Rhakotis," which stranded in the Scheldt at the end of September was safely floated after lighterage, and proceeded again on her outward voyage.

Our smaller and older vessels, viz: "Neko," "Ramses," "Memphis," "Hathor" and "Luxor," which were no longer suitable for our requirements, were sold last year, also the "Penotor" and "Menes" at the beginning of this year. To replace these, we have contracted for five cargo steamers, each of 12,000 tons carrying capacity, of which four will be built by the J. C. Tacklenborg Co., Ltd., Geestemunde, and one by the Flensburg Shipbuilding Co., Ltd. They will be delivered to us in May, July and August, 1912, also in January and March, 1913, so that our fleet will then again consist of 33 vessels, altogether.

Our export trade has been considerably increased, in consequence of much railway material having to be sent out, also in consequence of the erection of various salt petre works. Against this, the increase in the export of ordinary merchandise is nothing worth mentioning.

The general position in Chili has much improved during the last twelve months, in consequence of the improved condition of the salt petre industry, and the increased activity in building operations, which has resulted in increased traffic all around. In the year under review, the export of salt petre from Chili amounted to 2,400,000 tons, of which 1,800,000 tons were shipped to Europe. Of this latter, 790,000 tons were brought into Hamburg, and of this quantity our own steamers brought 330,000 tons. We have already booked up a large proportion of our cargo space for 1912 and 1913 for salt petre at remunerative rates of freight.

The prospects for the grain harvest are good, so that it is anticipated there will be large quantities of grain to come forward.

It has also to be noted that there is a new export from the Provinces of Coquimbo to Europe in the shape of iron ore, and in view of the reputed good quality of same it is hoped that quite a good traffic in this ore will be developed by offering to bring same forward at reasonable rates of freight.

Unfortunately the general conditions regarding discharging at Valparaiso still leave much to be desired, the quay space being very inadequate. In many other ports on the

coast, the landing facilities are likewise still most inadequate.

The coast trade between ports on the west coast has not brought much revenue, as rates of freight have been brought so low owing to the large amount of tonnage offering for this business.

Bolivia—The export of tin during the last year was very gratifying, and during the present year still better results are anticipated.

The Antofocasta and Bolivia Railway Company, Ltd., have done little as yet in the extension of their railroads, and it is therefore expected there will be large shipments of railway material still to go forward in the future to Antofocasta. The railway between the Chilean port of Africa and the Bolivian capital, La Paz, will be completed by September this year. The present traffic from Mollendo via Puno and from Antofocasta via Oruro will then be diverted to this new stretch of line.

Peru—The political relationships towards Chili, Ecuador and Colombia remain strained; in particular, there appears to be no likelihood of an early settlement of the dispute with Chili concerning the Province of Tacoma. No increase worthy of note in the exports and imports can be reported. No change has taken place with respect to the monopoly held on the Darseno wharf in the port of Callao.

Also in Ecuador the political feeling is still strained. There has been no noteworthy increase in the imports, although the export of cocoa was considerable. Whilst we received a fair portion of the business to and from this port, our Guayaquil steamers suffered considerable delay at this port, as the government leaves all the loading and discharging operations in the hands of one company, which, accordingly, has the full monopoly, and furthermore they work with the most inadequate material (men). Owing to the epidemics which were prevailing in Guayaquil, all steamers from that port were subjected to long quarantine detention on arrival at their next port of call.

Our traffic with the ports on the west coast of Central America has suffered somewhat severely, as the coastal steamship service on the Atlantic side of the Isthmus has been much improved of late, and this assists the railways in quoting lower rates of freight, and thus inducing traffic via that route. As the opening of the Panama Canal is anticipated in the near future, several small lines have already commenced running services to the neighboring ports, and this has resulted in a reduction of our outgoing trade to California and British Columbia. What changes will be occasioned, or necessary, in the working of our line on the opening of the Panama Canal cannot at present be determined, but this will receive due consideration when the time arrives.

Our working expenses in respect to wages, equipment, repairs, bunker coals and government taxation have increased.

With respect to ordnance, respecting insurance of private officials of the company, we are covered in the United Shipowners' Compensation Society, against reciprocity, in Hamburg.

We have to state that our foreign agencies have been and are being satisfactorily conducted, always with a view to the increase of the company's business, the quick dispatch of our steamers and due regard to correct and efficient loading of same.

The prospects for the current year are good.

THE BOARD OF DIRECTORS.

## HAMBURG-AMERICAN LINE

THE accounts of the Hamburg, Amerikanische Packetfahrt-Gesellschaft for 1911 show a net profit of 11,405,665 marks, which after deducting directors allowances, leaves a disposable surplus of 11,250,000 marks; this sum being distributed to the shareholders at a dividend of 9% or 90 marks per share. For the year 1910 a dividend of 8% was paid; 1906 6%; 1908 nil and 1906 6%.

The gross earnings last year reached the enormous total of 43,799,945 marks (against 39,916,727 marks in 1910 and 33,036,168 marks in 1909), and out of this sum 3,278,859 marks were paid as interest on the priority loans, 1,348,108 marks were added to the insurance reserve, and 27,676,412 marks were written off for depreciation or added to the renewal fund, the "competition-fighting" funds, and the strike fund, the result being the net profit above stated.

The past year is described as a very favorable one for the company's business, the cargo-carrying trade on the principal routes having been much brisker than could have been expected. Not only New York, but Baltimore, Philadelphia, Boston, and the gulf ports all participated in the increased activity, and with Canada also the traffic grew considerably. On the other hand, the emigration movement to the United States was considerably behind that of 1910. As regards the trade with eastern Asia, certain circumstances combined to hinder the development of the traffic, such as inundations, famine, and then the revolution in China. The cargo trade with Japan, however, was quite brisk in both directions, owing to a great extent to the abundant harvest. The company's Chinese coastal service yielded very little profit, and has consequently been curtailed, and the service to Siberian ports, carried on in conjunction with other owners, suffered from the appearance of new competition on that route. The line between New York and eastern Asia, also worked in partnership with other firms, yielded satisfactory results. By virtue of the contract with the German Hansa Company, twelve voyages were performed to British India, also with satisfactory results. The outgoing traffic to the West Indies improved, but no progress was made in the homeward direction. The company's Hamburg-Mexico lines profited greatly by the continued development of the traffic on the Tehuantepec route, notwithstanding the low rates of freight obtainable, and the Cuba lines also worked with profit. A very important change has been made in the "Atlas" service in the shape of a contract with the Atlantic Fruit Company for the transport of bananas from the West Indies to New York and several European ports. The company's lines to South America were greatly hampered by the totally insufficient accommodation in several of the ports, more especially at Buenos Ayres. The homeward traffic from Argentina suffered, as usual, from a superabundance of tonnage, and was rendered still less profitable by the failure of the maize harvest. With central and south Brazil trade was active, but the cargo trade with north Brazil left much to be desired. The New York-Brazil line, which had previously been unprofitable, experienced some improvement last year. The conditions prevailing in the States on the west coast of America, especially Chili, improved last year, and the company's service in that direction, worked in common with the Kosmos company, was satisfactory. The report adds that a considerable increase of the fleet is in prospect. For instance, two more quadruple-screw turbine steamers, each of 50,000 tons gross register, have been ordered for delivery in the spring of 1914 and 1915; they will be of the same type as the great passenger steamer now nearing her completion (the Imperator). Besides

these three boats, however, ten other steamers are now in course of construction for the company, exclusively in German yards. Further, it is noted that ten new steamers were added to the fleet last year, while seven old ones have been sold, and one was sunk in a collision. By virtue of these changes the aggregate gross tonnage of the fleet has been raised to 1,210,717 reg. tons, which is an increase for the twelve months of 187,402 tons, and it consists of 179 ocean steamers and 229 river steamers, tugs, lighters, etc., or, altogether 408 craft of different kinds. In order to provide funds for the payment of the boats which have been ordered, the directors propose that the share capital shall be raised from 125 to 150 million marks.

### INCREASED GOVERNMENT AID SOUGHT FOR CANADIAN-MEXICAN SERVICE.

The Canadian-Mexican Steamship Service, which hitherto was operated by two boats on a monthly schedule, has been found inadequate and insufficient to keep up the regular sailings. The service has now been taken over by the Union Steamship Company of Vancouver, and a petition which received the endorsement of the Vancouver Board of Trade was recently made to the Dominion government at Ottawa for an increase in the subsidy, which would enable the establishment of a regular schedule to be operated by three boats, on both outward and homeward voyages, to sail at intervals of three weeks. In addition, the petition called for permission to call at San Francisco each way, so as to be able to take Canadian goods on the southbound voyage and bring American goods on the northbound trip.

### CANADIAN-NORTH PACIFIC FISHERIES COMPANY, VICTORIA, B. C.

In the report of this company for the thirteen months ending December, 1911, a profit of \$478,073 is shown; interest on debenture stock absorbs \$101,204; sinking fund for repayment of debenture stock, \$59,891; depreciation, \$64,193; dividend of 3½ per cent for seven months to June 30 last, \$87,500; semi-annual dividend for period from June 30 to end December last, \$75,000; \$90,284 forward.

### CANADIAN ACT TO ENCOURAGE DRY DOCKS SHOULD INCLUDE GUARANTEE OF PRINCIPAL AND LIMITATION OF TIME FOR CONSTRUCTION.

Referring to the article under this heading published in our March issue, the following letter has been received from the Hon. R. L. Borden, Premier of Canada:

"Prime Minister's Office,

"Ottawa, Canada, Feb. 15, 1912.

"I have your letter of the 5th inst., enclosing certain suggestions with respect to encouragement to dry docks. The representations you make will have the careful and earnest consideration of the Government.

"Yours faithfully,

(Signed) "R. L. BORDEN."

Quartermaster's Office, 322 Arcade Annex, Seattle, Wash., April 1, 1912.—Sealed proposals will be received here until 10:00 a. m., May 1, 1912, for transportation of government troops and supplies to and from Alaska during the open season of 1912, also for the fiscal year 1913. For further information address W. H. Miller, Quartermaster, U. S. A.

PROFITS AND LOSSES OF LARGE STEAMERS

The subjoined, compiled by Engineer Otto Alt of Frankfurt, Germany, is extracted from the Weekly Frankfurter Zeitung of the 23d of February, 1912, and translated for Pacific Marine Review by L. Heynemann, consulting engineer of San Francisco,—Ed. Note.

Our readers are aware of the extension of the shipping business as exemplified by the three mammoth steamers of the "Imperator" class of the Hamburg American line (H. A. L.). England, with its two turbine steamers, Lusitania" and "Mauretania," has held the record since 1907 relative to size and speed. The White Star Line (W. S. L.) placed the "Olympic" in service in 1911 and will soon also put a sister ship, the "Titanic," in service. To exceed the "Imperator" the Cunard line (C. L.) ordered the "Aquitania," for which it laid the keel in November, 1911, and in January, 1912, there was a rumor of a still larger vessel for the W. S. L. The principal items of this wonderful development are shown in table No. 1:

Ship and Comp'y	When placed in service	Lengths in meters	Gross tonnage (G. T.)	Horsepower H. P.	Speed in knots	Persons
"Lusitania," C. L.	1907	238.0	32,000	70,000	25.5	3,200
"Olympic," W. S. L.	1911	268.0	45,000	46,000	21.0	3,346
"Imperator," H. A. L.	1913	268.0	50,000	68,000	23.0	5,200
"Aquitania," C. L.	...	270.0	50,000	68,000	23.0	...
Proposed, W. S. L.	...	304.8	...	...	...	...

One meter equivalent to 3.28 feet.

Gross tonnage is figured as the space occupied by the machinery, coal cargo, passengers and crew in cubic meters divided by 2.832. In examining the question whether these steamers can pay, three German steamers will be compared with regard to their income and expense:

No. 1—The largest German steamer "Kaiser Wilhelm II" (K. W. II) of the North German Lloyd (N. G. L.).

No. 2—The largest mail steamer, "Kaiserin Auguste Victoria" (K. A. V.) of the H. A. L.

No. 3—The "Imperator" (H. A. L.).

The "Lusitania" and "Mauretania" are not particularly mentioned because they are very similar to the "K. W. II" class and the figures for the latter can be proportionally increased for the former. The principal data regarding these three ships are to be found in table No. 2. The costs are estimated, but are not far from the actual cost.

Table No. 2

Ship—	Length in meters	G. T.	H. P.	Knots	Length of Voyage in hours	Coal consumption per trip in tons	Cost of ship in million marks.	Cost per gross ton in marks
K. W. II.	215.3	19,361	45,000	23.5	153	4,800	15.7	775
K. A. V.	213.0	24,581	17,500	17.0	212	2,600	18.5	750
Imper.	268.0	50,000	68,000	23.0	156	7,500	38.0	760

One mark equivalent to about 24 cents.

Ship—	Passengers				Crew	Totals of persons
	1st class	2d class	3d class	4th class		
K. W. II.	772	343	...	770	600	2,485
K. A. V.	601	286	216	1,800	588	3,491
Imperator	700	600	1,000	1,800	1,100	5,200

From the ninth column it will be observed that the gross ton costs are about the same for these three vessels. There are a number of expense items that can be eliminated, as they are already contained in the value of the vessel or may be regarded as representing a proportional reduction of the income. These items are interest, depreciation, insurance, repairs, expenses for the maintenance of machinery, crew and passengers, cost of handling, taxes, legal expense, etc. We are only interested in such expense as is subject to the greatest fluctuations, as, for instance, the cost of coal. In table No. 3, besides the horsepower and time and length of trip in hours for the journey from Hamburg to New York and the number of trips per year, the cost of coal for one trip and the yearly cost of coal (at 18 marks per ton) are referred to three different speeds for the "Imperator."

Table No. 3

Knots	H. P.	Duration of trip in hours	Number of yearly trips	Cost of coal per trip in marks	Yearly cost of coal per gross ton in marks
20	42,000	180	18	96,000	34.6
23	68,000	156	21	135,000	56.7
26	106,000	138	24	185,000	88.8

The question now arises with what speed will the "Imperator" run most profitably. The H. A. L. in answer to this question states as follows: The velocity will be that of a fast steamer without wishing to establish any new record. It is clear that the speed is of great influence in the matter of profit. The speedier, the more coal is used. On the other hand, more trips can be made; that is to say, greater income secured. It is justified to ask a higher fare for the quicker trip, notwithstanding the smaller outlay for food, etc., as the time of passage is reduced and therefore the money making capacity of the passenger increased. Competition, however, is the criterion in this case, and we can take for granted that the "Imperator" will have 23 knots speed in order to beat the "Olympic" and "Titanic" and to be on an equal footing with the "Aquitania." This value has been taken for table No. 4, which gives the expense for coal and the number of yearly trips for our three ships.

Table No. 4

Ship—	Speed in knots	Duration of trip in hours	No. yearly trips	Cost of coal per trip, in marks	Cost of coal per gross ton, in marks
K. W. II.	23.5	153	21	87,000	34.5
K. A. V.	17.0	212	16	47,000	30.6
Imperator	23.0	156	21	135,000	56.7

From the last column the influence of the size of the ship on the expense of coal is made clear. A proportion between the "K. W. II" and the equally speedy "Imperator" is as 10 to 6. Even with 26 knots of the "Imperator" the yearly coal expense per gross ton is less than in the case of the "K. W. II," as shown by table No. 3. To equal the expense of the "K. W. II" the "Imperator" would have to have a speed of 26½ knots. Table No. 3 and table No. 4 also show that 20 knots of the "Imperator" correspond to 17 knots of the "K. A. V."

The main sources of income are in fares and freight.

The fares are figured from the price lists of the "K. W. II" and "K. A. V." The price lists of the "Imperator" are not yet published and the prices for its fares have been figured from the usual prices for fast mail steamers. In table No. 5, in the second column, the freight income per trip is figured at 14 marks per ton for the "K. A. V." and 18 marks for the "Imperator," and in the fourth column the gross income for a trip is figured at summer prices with a full ship, and in the fifth column the income per gross ton for fares for a full ship; that is to say, for a ship with a full complement of passengers.

Table No. 5

Ship—	Freight per trip, in marks	Freight per gross ton per year, in marks	Fares per trip, in marks	Fares per gross ton per year, in marks	Fares per gross ton per year first class and tween decks half occupied, in marks
K. W. II...	168,000	110	920,000	825	470
K. A. V...	90,000	38	915,000	530	300
Imperator	90,000	38	1,300,000	500	330

From this the favorable position of the "K. W. II," column 5, may be noted. If one considers, however, that in its first-class arrangements four passengers are accommodated in each stateroom, which is not the case in the steamer "K. A. V.," and probably will only be the case in the cheaper staterooms of the "Imperator," a different viewpoint may be reached. On this account many passengers will prefer the "K. A. V." and "Imperator." The situation alters materially in favor of the "Imperator" if we compare (column 6) the yearly income in case the first-class and 'tween decks are only half occupied. The results of this examination are only to be regarded as relative and approximate. It is shown that the "Imperator," with six knots greater speed, does not quite reach the "K. A. V." in the matter of running at a profit. On the other hand, if the unfavorable financial position of the steamers of the N. G. L. is compared with the good results that the H. A. L. has achieved with steamers of the "K. A. V." class, it is easily possible that the "Imperator" may exceed in profit capacity the present fast steamers. In the first few years the novelty of traveling on so huge a vessel with its magnificent furnishings will attract passengers and entice them from vessels of other companies, which is an important factor where profits are a matter of consideration. A further extension in the sizes of ships does not meet with any technical impossibilities. To figure the profit and loss of such larger vessels will approximate the method as shown in the "Imperator." There are, however, other considerations that limit the size of ships, such as the limited depth of harbors, the cost of drydocking such leviathans, the locks and depths of canals, etc. Only in such periods of expansion in which we live at present will these difficulties be overcome in order to advance to still higher limits.

Quartermaster's Office, 322 Arcade Annex, Seattle, Wash., April 1, 1912.—Sealed proposals will be received here until 10:30 a. m., May 1, 1912, for trans-Pacific transportation from Portland, Oregon, and/or Puget Sound ports for passengers, animals, freight, United States troops, etc., during the fiscal year commencing July 1, 1912. For further information address W. H. Miller, Quartermaster, U. S. A.

JAPANESE INVESTMENTS IN CHINESE ENTERPRISES

An interesting development of the Chinese crisis is that Japanese capitalists have been induced to turn their eyes toward their neighboring country as a field for profitable investment.

When Japanese capitalists are spoken of by Englishmen it is necessary that limitation should be applied, for the possessor of property valued at £30,000 (\$145,995) is counted rich in Japan, and there is only one man whose estate of £8,000,000 (\$38,932,000) entitles him to be reckoned wealthy anywhere. Moreover, capital is needed for so many purposes of domestic enterprise that there has hitherto been little margin for using it abroad.

Important Steamship and Other Transactions

Some three years ago there was organized in Tokyo the To-A Kogyo Kaisha (East Asia Industrial Co.), which had for its main object the financing of industrial enterprises in China. The promoter and principal shareholder was Baron R. Kondo, president of the Japan Mail Steamship Co. (Nippon Yusen Kaisha). This company has hitherto engaged in no transaction except a loan of £130,000 (\$632,645) to the Hankow Hydroelectric Co., nor did there seem to be much likelihood of larger operations. But the enterprise proved vicariously useful, for its directors, having kept close touch with affairs in the Yangtze Valley, are now discussing the advisability of lending £1,000,000 (\$4,866,500) on the security of the China Merchants' Steam Navigation Co.'s fleet. The money would be taken from the coffers of the Nippon Yusen Kaisha, and the transaction might result in close association between the Chinese firm and a mixed company—the Japan Steamship Co.—which is the offspring of three Japanese associations and one Chinese, and which operates on the Yangtze.

Mr. K. Okura is also interesting himself in financial transactions with the Chinese. He has indorsed a loan of £300,000 (\$1,459,950) made by several Tokyo bankers for the purposes of the Hu-Hang (Shanghai-Hangchow) Railway, and he is understood to be taking similar action for a somewhat larger arrangement with the Kainghsi section of the Kyukiang-Canton Railway.

There is further mooted a still larger transaction in connection with the Chinese company which owns and works the Taiya iron mine, the Pinghsiang coal mine, and the Hanyang foundry. Japan is vitally interested in the Taiya mine, since she obtains from it the great part of her iron, and already she has assisted the company to the extent of £800,000 (\$3,893,200). The idea now is to increase that amount to £2,000,000 (\$9,733,000) and to place the enterprise in the hands of a joint Chinese and Japanese company.

All these operations, even when bulked together, do not make a very formidable figure, but they seem to prove that Japan is anxious to assist in China's material development.

The Canadian government has placed an order with the Safety Car Heating & Lighting Company of New York and Montreal for forty buoy lanterns. These lanterns have been developed by this company to meet the demands of ghause bureau requirements. They are supplied with improved flashing mechanism capable of giving a double characteristic; that is, one second light, one and one-half seconds dark, one second light and five seconds dark; the short and long dark periods alternating with one second light periods intervening. The lanterns are known as 200 mm., and will be used for coast and harbor and river lighting.

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## UNITED STATES MARITIME LAW AS IT RELATES TO THE MARINE ENGINEER

**T**HE advent of steamship building in general, the rapid strides made in this sphere and the creation of veritable monsters that make the deep boil like a pot necessitated the requirement of highly skilled and competent men to serve these vessels successfully and creditably, both on and below the deck. Thus, in addition to the seaman, a new type of seafarer was called into existence, the qualified marine engineer, whose duties are so onerous, the complications so many, the need of watchfulness so great that the essentiality of this new type of men came into being to comply with these demands.

The progress in mechanical engineering during the last half century has been amazingly phenomenal. In no case is this more true than in the application of the steam engine to marine propulsion, the history of which constitutes an object lesson of the highest importance, in relation to rapid transit under superior conditions in the extension of the world's commerce on scales never dreamed of.

The great modern ocean liners, from first to last, are the result of this progress in mechanical engineering. Vessels carrying 3,000 passengers or more, and the necessary large crew, in addition to thousands of tons of freight, have become better paying institutions than the smaller vessels of yore. The ocean cargo carriers, ministering to the world's necessities, represent economy in operation as the essential feature. At one end of the scale, we have the "Olympic" and "Titanic," and the "Mauretania" and "Lusitania," with the "Imperator" class to come. On the other end, the "Mary Jones," fictitiously so named, carrying 5,000 tons of bulk cargo, propelled at a moderate speed of 8 to 9 knots by a single screw-triple expansion engine, indicating no more than 2,000 horsepower.

As we trace the developments which have taken place in modern shipbuilding and marine engineering, we find that the results achieved emanate from the demands made by progress for safety, economy, dispatch, comfort and pleasure. Size and construction, in certain respects, make the ocean passage safer, while improved engines reduce the fuel consumption and increase the speed, and oil burning installation reduces the number of crew, with numerous other advantages. The shipbuilder and engineer are well aware of the demands made upon them by structural requirements and at every instance cope with tasks in the exercise of ingenuity and inventive ability of the highest order, which are continuous in action from the moment the first specifications are shaping until the wonder

of naval architecture, the ship, is delivered to its owners complete in every minute detail.

Is there any engineering in the world which can in vital importance compare with marine engineering of today? I am inclined to believe that there is none!

The duties of the marine engineer practically cut him off from the open air, common to all seamen; there is no meditative contemplation of the glories of the tropical night, when, in the midst of these mighty solitudes in the open ocean, man draws near to the great heart of nature, feels himself akin to the stars above and the deep below; no heart uplifting view of the apocalyptic splendors of the dawn is his, before the palpitating glow of the approaching sun, when the gray shadows of night melt away. No speechless delight is experienced in the indescribable panorama sweeping past, when the swift vessel skirts closely the wonders of foreign shores. At such times the engineer and his crew are far below the ocean's surface, confined to the bowels of the ship and shut in from all sights, sounds and fragrance, save those of the engine room and stokehold, which are akin to those of Tartarus. This can never be understood by the uninitiated and although the writer is not an engineer, he has, as a sailor, always taken a keen interest in the important branch constituting the engine department on shipboard.

Then, again, when through the black night the vessel plunges heavily into high head seas, remorselessly driven against combined forces of wind and sea, the engineer is well aware of what depends upon him. His duties become doubly strenuous when at one moment the whirling blades of the propellers are deeply buried, their thrust vibrating through every fiber and rivet of the ship, the next lifted into the air by a downward plunge of the vessel's bow, spinning madly with acceleration of speed on their release from the element in which they have toiled. The engineer then faces his titanic charge, in attendance at the throttle valve, his eye upon gauges and index glasses, every sense on the alert to shut off the supply of steam, even sooner than the governor can act, to prevent disaster to the engine, while the driving steam is still bursting in through main feed and slide valves.

The engineer ashore may and does have all of his repairs done by others. The engineer at sea must in the very nature of things be not only the most competent of engine drivers, but must be ready at any moment, day or night, to undertake the most radical repairs, with improvised adjuncts and to execute instantly repairs with masses of steel that if they were described in detail would sound impossible, except in the spacious and full equipped machine shop ashore; in this respect reference may be made to the now perfected Thermit electric welding process. Not only this, but the work must be done under adverse conditions, in cramped space, with imperfect lighting and the rolling of the vessel to contend with, which makes the duty so much more hazardous. The repairs must also be well done, for no commander in possession of the highest ability and efficiency is able to get steerage way on his vessel, during serious breakdowns, in which the ship is then at the mercy of the ocean—"drifting." This, of course, would relate principally to the single screw steamer.

Again, the more recent developments of the marine engine and its auxiliaries have not only imposed additional burdens and responsibilities upon the engineers, but they have rendered it imperative that they should acquire a thorough, practical and theoretical knowledge of the triple and quadruple expansion of steam, the application of forced draft, the use of liquid fuel, the construction and operation of the refrigerating machinery, the electric generating plant and its numerous advantages, dynamos and wiring, the ventilating, heating and cooling systems, the



hydraulic and pneumatic engines, feed heaters, filters, evaporators, condensers, in fact, briefly, all the main propelling and auxiliary machinery in use on shipboard.

It is, therefore, essential that every engineer who desires to keep in the front rank of his profession and to increase his knowledge to such an extent that he will be enabled to deal intelligently with the improved applications of energy, such as the turbine, the internal combustion engines and the altering conditions which in these progressive days present themselves in so many various ways to him. Some idea of the extent to which the responsibility of the chief engineer of a modern ocean liner has increased may be gathered from the fact that whereas a vessel such as the "Olympic" requires a crew of only sixty-three officers and men, including the commander, for the safe navigation of the vessel, the engine room complement numbers 322 men, including engineers, oilers and stokers, no water tenders, however, as our maritime law requires the American shipowner to carry on his vessels, indeed an extra expense unjustly applied.

The head of this department must not only possess profound technical knowledge and skillfulness in training, but must have vital organizing and administrative ability in order that such vessel may be kept running on schedule, leaving and arriving at the terminal ports, favorably comparing with the regularity and punctuality of an express train ashore, despite the more adverse conditions of wind or weather. This can only be accomplished by the hearty co-operation of the chief engineer with the commander of the vessel.

Progress is naturally only made by moving forward, both in deep thought as well as strong actions. The United States maritime law, as it relates to the marine engineer, in comparison with the requirements of those of other nations, stands today unmovable, to the detriment of our country at large, and how degradingly so, I undertake to elucidate on the one side through ancient history, on the other through modern facts.

When, through special act of Congress, the late United States President, Benjamin Harrison, hoisted in New York harbor, under the salute of guns of United States cruisers, the Stars and Stripes on the British built steamship "City of New York," in exchange for the blue ensign of Great Britain, indicating the Royal Naval Reserve, the senior engineers of this vessel, as well as the sister ship, then "City of Paris," now SS "Philadelphia," on board of which this ceremony was performed in Southampton, England, had become naturalized American citizens, while the junior engineers were retained during the period of their naturalization, many of whom were later transferred to the American built steamers the "St. Louis" and "St. Paul," constituting the American Line Express Mail steamship service, aided by a mail subsidy from the U. S. government. All of these engineers were of Scotch or English birth, and the larger portion are so today. They are trained abroad, hold British certificates of competency and obtain the American license through examination, which is indeed child-play to them. The above statement refers likewise to the American built steamers for the Red Star Line, the SS "Kronland" and "Finland." Why is this? It is simply because our navigation laws did not then, nor do they today, efficiently provide defined rules, regulations and guides for the engineer aspirant in the thorough training and examination of the up-to-date marine engineer, as other nations do and have done ever since they attempted to rise to maritime prominence and power.

Having convincingly arrived at a point of necessarily more intrinsic comparisons and in pursuance of such facts, one has only to visit the United States steamboat inspection offices to request information in relation to the requirements for the examination of marine engineers,

concerning which subject the respective inspector in charge, due to our inadequate and ancient law system, is incapacitated to give any other enlightenment than that which is contained in the general rules and regulations prescribed by the board of supervising inspectors, as amended January, 1911.

In this comprehensive volume of 140 pages, pertaining more to duties and regulations affecting the authority of inspectors, regarding the deck and engine room equipment of vessels and inspection in general than the pre-eminent subject of marine engineers' examinations, one will find two short paragraphs devoted to the requirements of third assistant engineer's license, stating: "That no person shall receive the above license who is not able to determine the weight necessary, etc.," the remainder of which will be given in full in a later paragraph in this article.

Under the heading of "First Assistant" (see page 95, paragraph 20) it is stated that "The applicant will be examined in the use of salt water method employed in regulating the density of water in boilers, the application of the hydrometer in determining the density of sea water and the principle of constructing the instrument."

In relation to the various chief engineers' licenses, we find classified in the U. S. rules (see page 95, paragraph 20) the following:

Chief engineer for ocean steamers.

Chief engineer for condensing lake, bay and sound steamers.

Chief engineer for non-condensing lake, bay and sound steamers.

Chief engineer for condensing river steamers.

The same classification is followed in the case of first, second and third assistant engineers.

In regard to the qualifications necessary to render a candidate eligible for examination in any grade in the United States, all that appears in these rules (see page 97, paragraphs 24 and 25) is: "No person shall receive an original license as engineer or assistant engineer (except for special license on small pleasure steamers and ferry boats of 10 tons and under, saw mill boats, piledrivers, boats exclusively engaged as fishing boats and other similar small vessels), who has not served three years in the engineer's department of a steam vessel, a portion of which experience must have been obtained within the three years next preceeding the application. Provided, that any person who has served three years as apprentice to the machinist trade in a marine, stationary or locomotive engine works, and any person who has served for a period of not less than three years as a locomotive mechanical engineer and any person graduated as a mechanical engineer from a duly recognized school of technology, may be licensed to serve as an engineer of steam vessels, after having had not less than one year's experience in the engine department of steam vessels, a portion of which experience must have been obtained within the three years preceeding his application, which fact must be verified by the certificate in writing of the licensed engineer or master under whom the applicant has served, said certificate to be filed with the application of the candidate; and no person shall receive a license as above, except for special license, who is not able to determine the weight necessary to be placed on the lever of a safety valve (the diameter of the valve, length of lever, distance from center of valve to fulcrum, weight of lever and valve and stem being known) to withstand any given pressure of steam in a boiler, or who is not capable to figure and determine the strain brought on the braces of a boiler, with a given pressure of steam, the position and distance apart of the braces being known, such knowledge to be determined by an examination in writing and the report of examination filed with the application in the office of the

local inspectors, and no engineer or assistant engineer now holding a license shall have the grade of the same raised without possessing the above qualifications. No original license shall be granted any engineer or assistant engineer who cannot read and write and does not understand the plain rules of arithmetic."

Under paragraph 25, page 98, we find: "Any person holding a license as third assistant engineer and having had twelve months experience as junior engineer, or twelve months combined service as third assistant and junior engineer, or two years' experience as oiler or water-tender, since receiving said license, shall be eligible for examination for license as second assistant engineer. Inspectors may designate upon the certificate of any chief or assistant engineer the tonnage of the vessel on which he may act."

Under paragraph 20 on page 95 we read: "Engineers of lake, bay and sound steamers who have actually performed the duties of engineer for a period of three years, shall be entitled to examination for engineer of ocean steamers, applicant to be examined in the use of salt water method employed in regulating the density of the water in the boilers, the application of the hydrometer in determining the density of sea water, and the principle of constructing the instrument, and shall be granted such grade as the inspectors having jurisdiction on the Great Lakes and seaboard may find him competent to fill."

Thus ends this dreamy and exceedingly meager epistle for the guidance given an applicant for examination as third, second assistant and chief engineer. In condensing the above copied rulings, governing the qualifications and training of a candidate for examination as an engineer, under the United States flag, void of any details of consequence as to this important subject of examination, we find reference made only to the strain upon a boiler's braces and shell under a given pressure, the weight necessary to be placed upon a safety valve lever and the regulation of the densities of water in boilers, the latter subject of which is given to engineers of ocean steamers only.

Thus, "the imaginary triple expansion marine engine of a four crank system is set going to full speed ahead, and with the lubricant of 'common sense', we are turning 300 revolutions per minute."

First of all, it should be noted that dead weight and lever safety valves have been practically obsolete for over fifteen years, so far as marine work is concerned, for the simple reason that variations of pressure upon the valve are caused by the weight or lever resulting from the rolling or pitching of the vessel. Spring loaded valves have taken their place. What a travesty upon the eternal fitting of things? U. S. maritime law as it relates to the marine engineer permits a young man without any elementary knowledge, mechanical training or preparation to put in thirty-six months of service in the engine department of a steam vessel, as stoker, oiler or water-tender, and then if he has had sufficient education, for such requirements as they are, to present himself for examination as a full-fledged engineer. The examination itself for the various grades is not at all conducted upon properly clear and well defined lines, nor does there appear a uniformity of standard, of excellence or technical knowledge which should be required by the inspectors having jurisdiction in the various supervising districts throughout the United States. Should such candidate be successful in obtaining his license and ultimately be placed in charge of the complicated machinery and auxiliaries of modern ocean vessels, how can it be possibly expected that he should be competent to maintain such machinery in a maximum state of efficiency and to operate with economy fuel consumption as signified by the judicious use of the indicator? How can he diagnosis the earliest symp-

toms of defects, decay, corrosion and galvanic action in condensers and boilers, involving possible breakdowns and disaster, and remedy them before a breakdown actually occurs? How can he in cases of emergency involving perhaps loss of life and/or damage to property, effect the most radical repairs with improvised adjuncts and under the most trying and difficult circumstances? In short, how can he be reasonably expected to carry out efficiently the multifarious duties of a skilled marine engineer in his dauntless conflict with forces of fire and steam, despite apparently unsurmountable difficulties, and bring the crippled vessel ultimately limping into port. It is in the very nature of things impossible, with the exception of the thoroughly trained men who are familiar with the construction of the smallest internal part of the machinery, its operation and the relation it bears to the engine as a complete mass.

I absolutely fail to see why the inspectors should designate upon an engineer's license the tonnage of the vessel upon which he may act. This is sublimely ridiculous and in this respect I ask, "What relation has the grade of an engineer's license to tonnage?" I understand its relation to indicated horsepower or in other words the size and power of engines and boilers an engineer holding a certain grade of license is permitted to handle and to take charge of, but I fail to see what the tonnage has to do with it, in consideration of the variety of vessels, as for instance the high speed of twenty to twenty-four knots of high power and small tonnage, or the low speed of eight to ten knots of low power and large tonnage?

Consider the absurdity of the paragraph in the rules, viz.: "No original license shall be granted any engineer who cannot read or write and does not understand the plain rules of arithmetic," when the whole examination as it now stands is conducted principally in writing. If a candidate is unable to read and write, how can he obtain theoretical and practical knowledge as well as technical information relating to engines and boilers? If he cannot figure, how could he possibly carry out any elementary duties of the marine engineer, in regard to calculating distances run by engines, horsepower, ship revolutions, consumption of coal, capacity of bunkers, ballast tanks, etc.? How then can such a man be designated as an engineer? It seems to me that this is about on par with the story told of an Englishman who, with two companions, a Scotchman and an Irishman, when tramping towards a certain town, arrived at four cross roads in the center of which stood a finger post, pointing in four directions, stating the distances to the nearest towns. The travelers read below the pointing hand the following notice: "Those that cannot read please inquire at the adjoining cottage." The Scotchman and Irishman laughing heartily at the utter absurdity of this notice, went on their way, with the Englishman accompanying them in meditative silence, not comprehending the cause of their merriment. After some intrinsic thinking, the Englishman finally bubbled over with laughter. "I see the joke now, if you inquired at the cottage, the man might be out!"

It is not a severe criticism upon the methods followed in training marine engineers in the United States, to face the fact that the great majority of positions of high responsibility in engineering, boiler making and shipbuilding establishments in this country are held by men who have received their technical education and training under the fostering care of foreign countries, which have laid down hard and fast rules, high and definite standards of excellence, which must be attained uniformly by all young men aspiring to the possession of a first class engineer's certificate of competency.

Nothing is left to the personal and individual judgment or discretion of surveyors and inspectors of foreign coun-

tries so far as an engineer's examination is concerned, except in the case of the stringent verbal examination, which is based on questions propounded by the examining board and is reduced to writing in the first place, in which a proficiency of remedying defects and the repairs of breakdowns of boilers and machinery must be shown.

The British and other European admiralities have chosen to train the naval engineer officer themselves, in order that he may be freed from the influence of the workshop and become a class apart from the mercantile marine engineer. However, in doing this they were compelled to build up a naval engineer reserve on which they can call upon in case of emergency or war.

The merchant marine engineer in such case will rank and rate as engineer officer, receiving all the deference due to an officer in the navy of the country so concerned. The days of the grimy, greasy mechanic of the sea are of the past. The marine engineer of today is truly an educated man and to a certain extent considered an expert in his profession both in theory and practice and while the commander is still and will in all times to come be in supreme command of the vessel in his charge, he knows, and only too well, what is due to the engineer, and what is more, he seldom fails to show him the well deserved respect and admiration. In brief, the marine engineer's vital importance is only too well recognized, as it rightly should be.

In the compilation of this article, I have before me in addition to the rulings of the United States board of supervising inspectors, those of the principal foreign maritime powers, namely, Great Britain, Germany and France, which so uniformly and remarkably coincide to a nicety in the requirements for the qualifications of marine engineers of all grades that it is an extreme pleasure to make comparisons, and in consequence thereof it would be useless to comment on but one, as the world's largest maritime nation, Great Britain, which will sufficiently prove our country to be at a disadvantage which is indeed humiliating from every point of view—and lo! and behold! what a contrast!

From the day the candidate in Great Britain enters upon his five years' compulsory apprenticeship in a machine shop, where marine engines are constructed and repaired, he may know exactly what practical and theoretical subjects he ultimately will be examined in, the nature of the problems he will be called upon to solve and he may then with certainty direct his course of systematic study along the lines necessary to enable him to become proficient in the various subjects which have been carefully selected by the examining board of the marine authorities as being those which will test the practical and theoretical knowledge, ability, and mechanical skill of the candidate and fit him for the efficient performance of his responsible duties on shipboard. That such training is essential does not require any argument.

After having mastered all the details of engine construction, he will in some way or another obtain a subordinate position in the engine room on board of some sea-going steamship to become conversant with the duties expected of him as an engineer in charge and naturally must devote all of his spare time to conscientious theoretical study to become fit to pass a rigid examination in engineering for a second class certificate. When the required term of sea service is completed and he has proved himself worthy of this position, after having successfully graduated in the required examination before officials of the Board of Trade especially appointed for that purpose, he then receives his second class engineer's certificate of competency, with which he has little difficulty in obtaining the position of Junior Engineer. With his foot on the ladder, the ascent is only a matter of time, providing he shows himself fully capable, competent, efficient and

reliable in all of his duties. Then another one year period of sea-service in a foreign-going vessel, as Senior Engineer in charge of a watch is required before the aspirant can present himself again for the examination entitling him to a first class certificate, which application must be accompanied by testimonials satisfactory to the Board of Trade in regards to his abilities and general good conduct, signed by the master of the vessel, in which he has sailed, and by the chief engineer, or the superintendent engineer of the company by which the vessel is owned. Having successfully emerged from the trials of this examination as a first class engineer, there is also in this seafaring branch a voluntary examination which every self-respecting engineer is only too ready to undertake, namely, "First Class Extra." These examinations are held once every three months and are intended for such engineers who have sufficient pride and ambition in the aspiration of proving their superior qualifications to obtain the highest grade granted by the Board of Trade. Having secured this, the engineer may rise to the proud position of chief engineer of the best floating wonders of shipbuilding and marine engineering which the admirable profession of Naval Architecture can now and may in the future call into existence.

The somewhat condensed regulations as required by the British Board of Trade for the qualifications of various grades in relation to engineer's certificates of competency are given herewith as a vivid proof of the contrast previously spoken of:

**Second Class Engineer**—Must be twenty-one years of age before he can become a candidate for the examination of this certificate so titled.

A. He must have served as an apprentice engineer for five years and proved that during the period of his apprenticeship he has been employed in the construction or repairing of steam engines, boilers, etc. Three years of the apprenticeship time must have been passed in the fitting or erecting-shops or in both. In calculating the five years of artisan service, which are to constitute the required apprenticeship, should not begin at an earlier age than fifteen, time spent in a technical school (recognized by the Board of Trade as suitable), where there is an engineering laboratory, may be taken into account and accepted to artisan service as the ratio of three years in the technical school to two in artisan service, provided that the applicant was over fifteen years of age and can produce the principal's certificate for regular attendance and satisfactory progress, provided also that in such case the other portion of the time was spent in the fitting or erecting shops of an engineer's establishment.

Every applicant must produce testimonials of ability as an engineer workman to the entire satisfaction of the Board of Trade. If the candidate has not served five years as an apprentice engineer or as a journeyman, he will require to have served in lieu thereof five years at sea on regular watch on the main engines or boilers of a foreign going steamer of not less than 66 N. H. P. or six years in a home trade steamer of not less than 66 N. H. P.

B. In addition to the apprenticeship as above described, or the alternative sea-service, the applicant must have served one year at sea as engineer on regular watch on the main engines or boilers of a foreign going steamer of not less than 66 N. H. P. or eighteen months in a home-trade steamer of not less than 66 N. H. P.

C. He must be able to give a satisfactory description of boilers and the methods of staying them, together with the use and management of the different valves, cocks, pipes and connections.

D. He must understand how to correct defects from accident, decay, etc., and the means of repairing such defects.

E. He must understand the use of the water gauge, pressure gauge, barometer, thermometer and salinometer and the principles on which they are constructed.

F. He must state the causes, effects and usual remedies for incrustation and corrosion.

G. He must be able to explain the method of testing and altering the setting of the slide valve and method of testing the fairness of shafts and adjusting them.

H. He must be able to calculate the suitable working pressure for a steam boiler of given dimensions, etc., the stress per square inch on crank and tunnel shafts when the necessary data are furnished.

I. He must understand the construction of steering engines, evaporators, feed filters and feed heaters.

J. He must understand the construction of centrifugal bucket and plunger pumps and the principle on which they act.

K. He must be able to state how a temporary or permanent repair could be effected in case of derangement of a part of the machinery or total breakdown.

L. He must write a legible hand, have a good knowledge of arithmetic up to and including common and decimal fractions and square and cube root. He must also understand the applications of these rules to questions about safety valves, coal consumption, consumption of stores, capacities of tanks, bunkers, etc.

M. He must be able to pass a creditable examination as to the various constructions of paddle and screw engines in general use; as to the details of the different working parts, external and internal, and the use of each part.

N. He must possess a creditable knowledge of the prominent facts, relating to combustion, heat and steam.

**First Class Engineer**—A candidate for a first class engineer's certificate must not be less than twenty-two years of age and in addition to the qualifications required for a second-class engineer, he must:

1. Have served at sea for 12 months, with a second class certificate of competency, as senior engineer in charge of a watch on the main engines or boilers of a foreign-going steamship of not less than 99 nominal horsepower, or

2. Have served at sea for eighteen months, with a second class certificate of competency as first engineer of a home-trade steamer of not less than 99 N. H. P.; or two years with a second class certificate of competency as second engineer of a home-trade steamer of not less than 99 N. H. P.

3. Have served two and one-half with a second-class certificate or third engineer of a home-trade steamer of not less than 99 N. H. P., if during the whole of that period he has been the senior engineer in charge of a watch on the main engines or boilers.

A. He will be required to make an intelligible hand sketch, or a working drawing of some one or more of the principal parts of a steam engine, and to mark in, without a copy, all the necessary dimensions in figures, so that the sketch or drawing could be worked from.

B. He must also be able to take off and calculate indicator diagrams.

C. He must be able to calculate safety valve pressures and the strength of the boiler shell, stays and rivetting.

D. He must be able to state the general proportions borne by the principal parts of the machinery to each other and to calculate the direct stress, the torsional stress and the bending stress in round bars and the direct stress and bending stress in rectangular bars with given loads.

E. He must be able to explain the method of testing and altering the setting of the slide valves and to sketch, about what difference any alteration in the slide valve will make in the indicator diagram and also the method of testing the fairness of shafts and of adjusting them.

F. He must be conversant with surface condensation, superheating and the working of steam expansively.

G. His knowledge of arithmetic must include the mensuration of superficies and solids and the extraction of the square and cube roots, and the application of these rules to questions, relating to the power, duty and economy of engines and boilers and to the stresses on rods, shafts and levers of the engine.

H. He must understand the construction of and be able to maintain in working condition, the auxiliary machinery which is placed under his charge, viz: refrigerating machinery, electric light engines, dynamos and wiring, electric motors fitted to ship's boats, hydraulic machinery and the various description of steering engines.

#### Extra First Class Engineer.

A candidate for a Extra First-Class Engineer's Certificate:

(a) Must be able to write good English.

(b) He must possess a thorough knowledge of the construction and working of the different forms of marine engines and propellers in all their parts and be so far acquainted with the elements of theoretical mechanics as to comprehend the general principles on which the machine works and to illustrate his knowledge of these principles by numerical examples.

(c) He must possess a knowledge of the theory of strain and stress, sufficient to be able to deduce the ordinary rules for the bending of rectangular bars and for the twisting and bending of round bars.

(d) He must be acquainted with the principles of expansion and the modern theory of heat and be able to solve questions in economy and duty in connection with engines and boilers.

(e) He must understand how to apply the indicator and to draw the proper conclusions from the diagrams and to construct the approximate diagrams for any given data.

(f) He must be able to produce without a copy, a fair working drawing of any part of the machinery, with figured dimensions fit to work from.

(g) He must understand the principles of the action of the screw propeller and the paddle-wheel and must be able to estimate numerically the effect in speed of ship and consumption of fuel, due to any alteration in pitch, diameter, revolutions, etc.

(h) He must be able to give a description of boilers and the methods of staying them and must show that he possesses a knowledge of the theoretical principles which regulate their construction and that he is able to calculate the strength of the boiler shell, stays and riveting.

(i) He must understand the general nature of the strains and stresses produced by the steam pressure and by the expansions due to unequal temperatures in boiler shells.

(j) He must have a knowledge of safety-valve construction, and the principles involved in determining the size of a safety valve and the construction of spring loaded and dead-weight valves.

(k) He must possess a thorough knowledge of the theory of combustion; the chemical composition of fuels; the evaporative duty of fuels of given composition; the production of draught; the effect in regard to economy, safety and wear and tear of increasing or diminishing the proportion of heating surface, of grate bar surface or area of section of air passages, of area of water surface, of steam space capacity and water capacity.

(l) He must be able to explain the formation of scale and the precipitation of salt, and the precautionary means adopted in respect thereto, with jet and surface condensers.

(m) He must understand the general principles involved

in the construction of the barometer, thermometer, salinometer and steam and vacuum gauges.

(n) He must be familiar with the general results obtained from past experience in relation to corrosion, pitting and galvanic action in boilers and the use of zinc, and of soda in boilers.

(o) He must give a variety of illustrations of how defects have arisen from accident, imperfect construction or deterioration and how these defects might have been prevented and the best way of repairing such defects.

(p) He must possess an intelligent knowledge of the properties of the lubricants, boiler cements and India rubber in general use in steamers.

(q) He must understand the causes of spontaneous combustion and the formation of explosive gases in coal holds and the precautionary measures proper to prevent accidents from these causes.

(r) He must be able to explain the construction and working of the refrigerating machinery in use on board ship, the electric lighting plant and wiring; the steering engines; hydraulic and pneumatic engines, the pumps and all other auxiliary machinery placed under the chief engineer's control.

(s) In order to intelligently deal with ballast tanks, the cocks, valves and pumps of which are under the chief engineer's control and to co-operate the more readily with the master in keeping the vessel in a safe condition, especially when she is light and when coaling operations are proceeding, candidates are expected to possess a knowledge of the stability of floating bodies.

(t) If the candidate does not obtain 67 per cent of the total number of marks allotted for the papers, he will be declared to have failed. The papers will be founded chiefly on the foregoing paragraphs.

It is furthermore of interest to note that the engineer surveyors of the British Board of Trade, at the various ports where examinations are held (except in the British colonies) have nothing whatever to do with propounding the questions set for the examination of candidates for certificate of competency (except in regard to the verbal examination). These questions are set by the examining board in London and having been properly sealed, are mailed to the different centers and are opened only immediately before the examination, by the clerk in charge of same, then distributed to the candidates. Each night the completed examination papers are returned to headquarters in London and checked by the board's examiners and after the examination is completed, which generally occupies three or four days, the results are telegraphed to the different ports so concerned. The successful candidate will then be put to a further verbal examination on practical subjects by the board surveyors, who must also be satisfied as to the candidate's practical skill and capability of efficiently performing his duties at sea, repairing defects or breakdowns that may occur in connection with engines and boilers when the engineer is thrown upon his own resources to effect such repairs while at sea. When the result of all this has been favorably reported to the Board of Trade, the appropriate grade of certificate is issued on parchment by the Lords of the Committee of the Privy Council of Trade and countersigned by the registrar General of Shipping.

The examinations are thus of a nature, and the knowledge required by the successful candidate is of such quality and quantity that when he receives his certificate of competency for either second, first or extra first-class, it is unnecessary to put any limitations upon the face of it as to the horsepower of engines he may handle or take charge of or whether condensing, non-condensing, etc., because he has proved himself capable of handling all of any size and type he may be called upon to operate. He

does not require any renewals, as he has his certificate for life, providing, of course, he never gives cause by a grave dereliction of duty for its cancellation, on which subject I intend to write an article in the future.

Such are the demands made upon marine engineers of foreign countries, in the comparison of which we are at least twenty-five years behind the times and in the face of present existing maritime laws, are actually facing backwards.

How many of those administering the limited qualifications for examination of our marine engineers are today in a position to pass such an examination as required by foreign nations and illustrated above?

In conclusions, I desire to commend upon the so termed Sherwood Bill, which is now before Congress, and which, among other things requires: "Motor boats over 40 feet long carrying freight for hire to have a licensed pilot and licensed engineer on board. It further requires fishing boats with motors over 40 feet long to carry licensed engineers and pilots." Commenting upon this bill, one of our contemporaries remarks: "It should be called an act to put a considerable number of men earning an honest living out of business," and adds furthermore, that "This measure is now before the Committee of Merchant Marine and Fisheries, this committee should report adversely upon it, as it is a good bill to kill," in which view Pacific Marine Review cannot and will not coincide, for the following reasons:

In Canada, and we are its next door neighbors in the west, a man owning a motor boat of one or more horsepower, only 16 or 18 feet long, either for pleasure or other purposes, is compelled to provide himself with a certificate of competency to run such a boat (secured by examination), or otherwise engage the services of a man who hold such certificate. Why then should the afore mentioned bill work a hardship upon the class of men affected, when they may secure a license upon examination, which is simple enough in all respects. It is an education and it sometimes becomes necessary to protect people against themselves.

The law which coerces the exaltation of a profession so essential to a country as that of the sea-farer in mechanical engineering cannot be vindicated upon any principles of justice or reconciled to any rational theory of government.

Awake, America! Awake! Educate thy law makers to the essentiality of maritime affairs of this wonderful and great country, of which the maritime laws, as they now stand inadequate and antiquated in their obscurity and dullness, are truly a farce.

E. F.

#### AN UNCALLED FOR CHANGE OF HARBORMASTERS.

It certainly reflects to no small extent upon the municipal administration of the city of Seattle to remove without any cause the late Port Warden of this harbor, Captain John W. Russell, who was appointed to this office by former Mayor G. Dilling. Captain Russell has filled this position to good advantage and to the satisfaction of every shipping firm and individual connected with water transportation at the port of Seattle, in fact, he has been far superior to any of his predecessors.

Captain Russell, during his only too short term as harbormaster, accomplished a great deal and in a spirit which won him the respect of all who have the welfare of Seattle's splendid port at heart. Why should political influence interfere with a man's faithfulness, energy and merit and why should Captain Russell be removed from an office, for which he was particularly so well fitted?



## SHIPPING IN SIXTY-SECOND CONGRESS, SECOND SESSION

## AMERICAN REGISTERS FOR CERTAIN SEA-GOING VESSELS

March 11, 1912—Committed to the Committee of the Whole House on the State of the Union and Ordered to Be Printed

**M**R. ALEXANDER, from the Committee on the Merchant Marine and Fisheries, submitted the following report to accompany H. R. 16692, which was published in Pacific Marine Review, February issue:

The Committee on the Merchant Marine and Fisheries, to whom was referred the bill (H. R. 16692) to provide American registers for seagoing vessels wherever built and to be engaged only in trade with foreign countries and with the Philippine Islands and the islands of Guam and Tutuila, and for the importation into the United States free of duty of all materials for the construction and repair of vessels built in the United States, and for other purposes, having considered the same, report it to the House with amendments, hereinafter specified, with the recommendation that the amendments be agreed to and that the bill as amended do pass.

The amendments are merely verbal and do not materially alter or amend the bill, but are intended to make the language of the bill clear and terse and free from ambiguity.

The word "exclusively" was inserted after the word "granted" in line 15, page 2, to make it clear that while foreign-built ships should not receive any privilege, advantage or favor in the use of the Panama Canal that might be granted exclusively to vessels of the United States engaged in the coastwise trade, yet they would be entitled to share in any such benefits along with American-built vessels in foreign trade.

This is not the first time a free ship bill for the foreign trade has been presented to the House for consideration.

Heretofore, however, this proposition has been coupled with other propositions. What is known as the Humphrey bill (H. R. 16362), reported to the House by the majority members of the Committee on the Merchant Marine and Fisheries at the second session of the Sixty-first Congress, carried a free ship provision; and what is known as the Speight bill (H. R. 21828), which was proposed by the minority members of said committee as a substitute for the Humphrey bill, also contained a provision for free ships.

On February 17, 1911, the Committee on the Merchant Marine and Fisheries reported to the House a bill (H. R. 31689, amended), authorizing the admission to American registry of seventeen vessels belonging to the United Fruit Company; also to admit to American registry, for four years from passage of act, seagoing steamers not more than four years old, of 2,500 gross tons or over, wherever built, and to engage in the foreign trade.

The proviso to section 1, beginning in line 18, page 2, of the bill, excludes foreign-built yachts, pleasure boats and vessels not used, or intended to be used, for trade from the operation of the bill. In other words, it leaves them liable to pay the ad valorem duty provided by the Payne tariff law as a condition to admission to American registry.

## Shipbuilding Material

Section 2 of the bill provides that all material necessary for the construction or repair of vessels built in the United States, and for the building and repair of their machinery and for their outfitting and equipment shall be admitted free of duty.

By the act of June 6, 1872, lumber, timber, hemp, manila, iron and steel rods, spikes, nails, bolts and copper for ship-

building were admitted free of duty. In the McKinley tariff of 1890 the list of free articles was extended to include wire rope, plates, angles and beams. The Wilson tariff of 1894 included "all materials of foreign production which may be necessary for the construction of vessels," and that provision was repeated in the Dingley tariff of 1897. All these tariff acts restricted the privilege of duty-free materials to vessels which engage in the coastwise trade not more than two months in the year. The Payne tariff of 1909 extended the privilege to vessels which engage in the coastwise trade not more than six months in the year. The repeal of the limitation of six months removes the last restriction upon free materials for shipbuilding.

Section 3 of the bill provides that vessels registered under this act may be taken and used by the United States as cruisers, transports and colliers upon payment to the owners of the fair and actual value of same, and in the event of disagreement between the parties as to such value the same shall be determined by appraisers.

On the 2d of August, 1911, the bill H. R. 8765 was referred to the Secretary of Commerce and Labor for an expression of his views, and on August 18, 1911, the chairman received the following communication relating thereto:

Department of Commerce and Labor,  
Office of the Secretary,  
Washington, August 18, 1911.

Hon. J. W. Alexander,

Chairman Committee on Merchant Marine and Fisheries,  
House of Representatives—

Sir: I have the honor to acknowledge the receipt of your communication of the 2d inst. with which you inclose a copy of your bill (H. R. 8765) and ask for a statement of my views with reference to the policy of the measure "in the house," as you express it, "that something will be done to enact this or a similar bill into law, if by co-operation it can be done."

The essential features of your bill are similar to those of Senate bill 1672, which I recommended in a report dated May 20, 1911, to the chairman of the Senate committee on commerce. The following observations in that report apply generally to your bill:

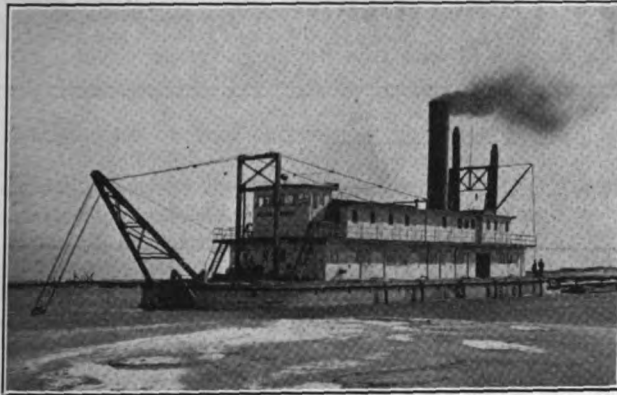
"The importance of a merchant marine owned by citizens of the United States and sailing under our flag cannot, in my judgment, be overstated. It appears to me to be an essential factor in the development of foreign trade. It would be accepted by all countries as the final proof of a determination to enlarge and to maintain our trade abroad; and it would place our government in a position to be consulted in the fixing of competitive rates by maritime carriers.

"While it would, of course, be desirable to have the benefit of such a merchant marine, and at the same time to have the ships built in our yards, experience seems to teach that, for the present at least, the accomplishment of both objects is out of the question. In other words, the ships are not built in our yards and the registry law has given no protection to the industry. In the meantime we are postponing the introduction of a much-needed merchant marine. I have no hesitation, therefore, in recommending the essential features of the bill, feeling assured that its enactment would deprive us of nothing, and may serve to provide us with a great commercial aid. If the law now proposed should not bring about the desired result, it may in any event serve to point out what else it is necessary to do in order that a merchant marine under our control may be secured.

"I have some question with respect to the provision of the bill in so far as it includes Porto Rico and Hawaii. The reasons for the adoption of the general features of the bill, which I have undertaken to state, in my judgment, do not necessarily apply to these points. Ships have been built in our yards which compete for the traffic between our country and Porto Rico and Hawaii. If this is so, then the withdrawal of the protection which they have enjoyed would, of course, serve to discourage further building of like ships in our yards and would, indeed, in some measure, operate to do injustice to those who have up to this time engaged

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in the building of such ships. The decision of this question seems to me to lie between the purpose to do justice to an industry which has gained a footing under the protection of the law and the desire to further and improve the transportation facilities now existing between these points, which, as to passengers at least, are confessedly inadequate. Perhaps I ought not to undertake to make a recommendation as to this feature of the bill. It presents a question of policy which belongs peculiarly to the legislative body and as to which, I assume, exhaustive examination will be had."

Foreign-built vessels, admitted to registry under your bill, cannot engage in the coastwise trade between the mainland of the United States and Porto Rico and Hawaii, and in this respect the measure is not open to objections which, as I indicated, might be raised to Senate bill 1672. Under your bill foreign-built vessels admitted to registry "shall not receive any privilege, advantage or favor in the use of the Panama Canal granted to vessels of the United States engaged in the coastwise trade." This exclusion and the bestowal upon American-built vessels of such advantages in the use of the canal as are consistent with our treaty obligations are almost indispensable to the growth of shipbuilding on our seaboard.

Your bill restricts the privileges of registry to foreign-built seagoing vessels not more than five years old, and it especially applies to foreign-built vessels admitted to registry, undertaking to engage in the coastwise trade, the penalties now prescribed by law upon foreign vessels which undertake to engage in that trade. In these respects also your bill, in my judgment, is preferable to Senate bill 1672.

The second section of your bill is the final step in a policy steadily advanced in the tariff acts of the past forty years. By the act of June 6, 1872, lumber, timber, hemp, manila, iron and steel rods, spikes, nails, bolts and copper for shipbuilding were admitted free of duty. In the McKinley tariff of 1890 the list of free articles was extended to include wire rope, plates, angles and beams. The Wilson tariff of 1894 included "all materials of foreign production which may be necessary for the construction of vessels," and that provision was repeated in the Dingley tariff of 1897. All these tariff acts restricted the privilege of duty-free materials to vessels which engaged in the coastwise trade not more than two months in a year. The Payne tariff of 1909 extended the privilege to vessels which engage in the coastwise trade not more than six months in the year. The second section of your bill removes the last restriction. As regulations under the section are to be prescribed by the Secretary of the Treasury, I suggest that the section be referred to him.

The bill affects statutes now in force in two particulars to which I invite your attention:

1. Section 37 of the tariff acts of August 5, 1909, pro-

vides for an annual collection of a sum equivalent to a tonnage tax of \$7 per gross ton, or an alternative duty of 35 per cent ad valorem upon foreign built yachts owned by American citizens. That section does not apply to a foreign-built yacht admitted to American registry. The first section of your bill would in effect repeal section 37 of the tariff act. If such be not your purpose, at the end of the first section the following should be added:

"Provided, That a foreign-built yacht, pleasure boat or vessel, not used or intended to be used for trade, admitted to American registry pursuant to this section, shall not be exempt from the collection of ad valorem duty provided in section 37 of the act approved August 5, 1909, entitled 'An act to provide revenue, equalize duties and encourage the industries of the United States, and for other purposes.'"

2. Your bill provides (p. 2, lines 3-7) that an American corporation may not own a vessel of the United States unless the stockholders are all citizens of the United States. If this requirement were restricted to foreign-built vessels which may hereafter be registered pursuant to the bill, it would cause no embarrassment and might be desirable. Your requirement, however, is general and will apply to all vessels of the United States owned by corporations. The act of March 3, 1825, provided for the issue of marine documents to vessels owned by corporations, and certainly since the act of June 11, 1858, such marine documents have not been invalidated by the transfer of aliens of some of the stock of such corporations. The corporation, in short, is deemed a citizen of the United States regardless of the nationality of its individual stockholders. Thus many of the ferryboats running out of New York are owned by well-known railroad corporations, the shares of which are subject to daily purchase and sale abroad as well as at home.

The essential purpose of your bill is to admit to American registry to a limited extent limited classes of foreign-built vessels. A change in the law of ownership is not necessary to the fulfillment of that purpose. Without expressing at this time an opinion as to whether the law of ownership should be changed, I venture the suggestion that it is not desirable to change it in this bill because such change would introduce into the discussion of the measure a question irrelevant to its general design, and if the bill became law would lead to embarrassments in domestic commerce which might obscure understanding of its purpose to develop our foreign commerce. A change in the policy of ownership will affect other laws besides section 4132 of the Revised Statutes.

Very respectfully,

CHARLES NAGEL, Secretary.

On January 3, 1912, Mr. Alexander introduced the bill H. R. 16692, conforming to the suggestions made by the honorable Secretary of Commerce and Labor, and said

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bill is reported by the committee with the suggested amendments referred to.

Just what this bill may do for our American merchant marine in the development of our foreign trade is a problem the committee has not undertaken to solve.

The one fact standing out clear and bold is that we have less than 1,000,000 tons of shipping under the American flag engaged in the foreign trade, as against Great Britain's more than 18,000,000 tons, Germany's 4,000,000 tons, and France's 1,750,000 tons, and while American shipyards have the monopoly of building ships for our coastwise trade, and none but American-built ships may be admitted to registry under existing law for the foreign trade, the American shipyards are not building any ships worth mentioning for the foreign trade.

It has been estimated that the world's commerce in 1910 amounted to \$2,986,799,622, or 61,426,748 tons. Of this amount \$2,721,962,475, or 91¼ per cent, in value and 51,016,460 tons, or 86 1-3 per cent, was carried under foreign flags, while only \$260,837,147, or 8¾ per cent, in value and 8,410,288 tons, or 13 2-3 per cent, was carried under the American flag.

In the past fifty-one years it has been estimated that the decrease in value under the American flag was about 44 per cent, while the increase under foreign flags was 1,084 per cent.

In the past thirty-five years the increase in tonnage under the American flag was 41 per cent, while the increase under the foreign flag was 214 per cent.

This is a humiliating showing for American commerce carried under the American flag.

Many causes have contributed to produce these results. It will not be profitable to discuss them here. The condition exists, the fact is undisputed. We are not building ships for our foreign trade, and our American shipbuilders say they cannot do so in competition with the foreign shipyards.

In the meantime other nations are carrying an increasing part of our commerce as well as extending their own foreign trade.

The opposition to this bill comes chiefly from American shipbuilding interests. While they are not building ships for the foreign trade and claim that it costs on the average of 40 per cent more to build a ship at home than abroad, they are unwilling that American citizens may buy ships abroad and bring them under the American flag for the foreign trade.

At the same time they are unable to give any assurance that they can meet foreign competition in shipbuilding for years to come, although they may import free of duty all the material and machinery entering into the construction and repair of ships.

The committee has not lost sight of the fact that from the foundation of the government our coastwise trade has been reserved for American-built ships and that well-equipped shipyards are or should be fostered along with the merchant marine and navy, but they are of the opinion that to admit foreign-built ships to American registry to engage solely in foreign trade cannot work any injury to

our shipbuilding industry, as they do not build any ships for that trade now.

On the other hand, if this bill becomes a law and foreign-built ships are bought by American citizens and navigated under our flag the overhauling and repairs on those ships will be of substantial profit to American shipyards.

It seems strange, however, that American shipyards cannot build merchant ships as cheaply as foreign countries, in view of the fact that the Fore River Company is building two battleships for Argentina, the contract for which was secured in competition with the shipbuilders of Europe.

Twenty-one years have passed since the ocean-mail act of 1891 was passed. During that time the Postoffice Department has had contracts with steamship companies to carry the mail, costing on the average \$1,300,000 per annum. During the period of 1901-1908, both inclusive, we paid \$11,464,179, or an average of \$1,432,897 per annum for this service. During the twenty-one year period, at the lowest estimate, we have paid out more than \$25,000,000 in mail subsidies, yet the following is a table of the only vessels built under the ocean-mail act of March 3, 1891, a little over 100,000 gross tonnage:

Steamships Built Under the Ocean Mail Act of March 3, 1891			
Name—	Year built	Gross Speed ton. Knots	Owner—
St. Louis .....	1895	11,629 20	Intern'l Mer. Mar. Co.
St. Paul .....	1895	11,629 20	Do.
Admiral Dewey...	1898	2,104 15	Amer. Mail S. S. Co.
Admiral Farragut.	1898	2,104 15	Do.
Admiral Schley...	1898	2,104 15	Do.
Admiral Sampson.	1898	2,262 15	Alaska Pacific S.S. Co.
Maracaibo .....	1899	1,771 12	Red "D" (Boulton, Bliss & Dallett)
Zulia .....	1901	1,713 12	Do.
Sonoma .....	1900	6,253 17	Oceanic S. S. Co.
Ventura .....	1900	6,253 17	Do.
Sierra .....	1900	5,989 17	Do.
Morro Castle ...	1900	6,004 18	N. Y. and Cuba Mail.
Esperanza .....	1901	4,702 16	Do.
Monterey .....	1901	4,702 16	Do.
Merida .....	1906	6,207 17	Do.
Mexico .....	1906	6,207 17	Do.
Havana .....	1907	6,391 18	Do.
Saratoga .....	1907	6,391 18	Do.
Colon .....	1899	5,667 17	Isthmian Canal Comm.
Panama .....	1898	5,667 17	Do.

Total ..... 105,749  
With this showing it would seem futile to hope that in the near future our American shipyards will be able to build ships for our foreign trade.

The fact must not be overlooked, however, that our shipyards will have an opportunity to furnish these ships. We assume that an American citizen wishing to build a ship will feel it to be his patriotic duty to let the contract to one of our shipyards rather than go abroad. The proof that ships may not be built here as cheaply as abroad is not conclusive.

That ships may be built in the American shipyards as cheaply as in the foreign, with the co-operation of the Steel Trust, is proven by the contract let to the Fore River Company to build the two battleships for Argentina.

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208 Walker Building, Seattle, Wash.

## **TUGS**

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**ADMIRALTY TUG BOAT CO.—Tacoma, Prosper and Wyadda.**  
**DISTINGUISHING MARKS—White Pilot House and Stripe Around Hull, Black Funnel.**

**AGENTS:** Pope & Talbot, San Francisco, Cal.; H. T. Hayden, Port Townsend, Wash.; W. Frank Andrews, Tacoma, Wash.; Victoria & Vancouver Stevedoring Co., Victoria and Vancouver, B. C.; Gracie, Beazley & Co., Liverpool, England; Dawson Bros., Glasgow, Scotland.

to which reference has already been made. Mr. Schwab, of the Steel Trust, was one of the active agents in securing that contract for the Fore River Company.

May we not reasonably expect that if this Congress declares in favor of free ships and free ship material, that the trusts controlling the material entering into the construction and equipment of ships will make concessions to our American shipyards that will enable them to build ships as cheaply as they can be purchased abroad and in this way prove of lasting benefit to our American shipyards?

If this bill becomes a law the Postmaster General, under the ocean mail act of 1891, will be authorized and empowered to enter into contracts with American citizens for the carrying of mails in vessels registered under its provisions between ports of the United States and such ports in foreign countries, Dominion of Canada excepted, as in his judgment will best subserve and promote postal and commercial interests of the United States.

The ocean mail act of March 3, 1891, provides that the vessels employed in the mail service under the provisions of the act shall be American steamships, owned and officered by American citizens, in conformity with existing laws, or so owned and officered and registered according to law.

If it is urged that foreign-built ships should not be permitted to receive mail pay under the ocean mail act of 1891, it is a sufficient answer to say that that act was so framed as to permit foreign-built ships to have that privilege if owned and officered by American citizens, and that we are now paying to the International Mercantile Marine Company (the Morgan Company) and have been for many years past, about \$739,000 a year for maintaining its weekly mail service with two American built—the "St. Louis" and the "St. Paul"—and two English-built ships admitted to American registry without payment of duty—the "Paris" and the "New York"—hence this will not be any departure from a policy long pursued by our government.

The Panama Canal will soon be completed. It will be of vital interest to American commerce for us to be prepared to establish new trade routes to Central and South America. We should get in on the "ground floor." Our coastwise trade is secure for American-built ships. We believe that in the use of the canal discriminating tolls should be granted to our American shipping and especially to vessels engaged in the coastwise trade. As our vessels have the monopoly of that trade it is certainly no concern of foreign nations what tolls we fix for our own vessels engaged in that trade. We also believe that American vessels should be favored in the foreign trade, if that may be done without violating our treaty obligations.

Foreign nations discriminate against our shipping in every possible way; then why not be keenly alive to our own interests and give to our American Merchant Marine every possible advantage in the use of the canal not violative to our treaty obligations?

The canal is being built on American territory with money contributed by the people of the United States and

paid out of the national treasury, and the American people should not be denied the large benefits to be derived from water, with rail competition between points on the Atlantic and Pacific coasts, through the sinister influence of the railroads or of the foreign ship combines or shortsighted policy on part of those charged with the duty of fixing tolls for use of canal.

If there is a discrimination in favor of American ships engaged in the foreign trade in the use of the canal, it will be enjoyed by the ships registered under this bill, hence to summarize:

First. This bill gives American citizens the privilege of buying ships for the foreign trade at from 40 to 50 per cent cheaper than they can do now. These ships will be eligible for service under the ocean mail act of 1891; they will be entitled to any benefits given to American vessels over foreign ships in the use of the Panama Canal.

It will be urged, as it has been in the past, with great force and eloquence that even with these advantages it will be impossible for American ships to compete with foreign ships, and for the alleged reason that American ships must be manned by American seamen at American wages; that they are provided with better quarters and are better fed than seamen on foreign ships.

While it is painful to disillusion those who believe this to be true, the facts are the crew space on English ships is 120 feet per man as against 72 feet under our navigation laws, and that the English food scale is quite as good as ours, and that aside from the licensed officers on our ships the crews are for the most part foreigners. On the Atlantic coast they are Portuguese, Spaniards, Norwegians, etc., and on the Pacific, in the foreign trade, Chinese.

The testimony given before the committee at the hearings in recent years shows that from 50 to 90 per cent of the crews of American vessels are foreigners; and all efforts to amend our navigation laws to require sailors on American vessels to understand orders given in the English language have been met with stout resistance by our vessel owners. They insist that with such a requirement in the law it would be impossible to secure crews for their ships.

We submit this bill with the firm belief that it will not injure our shipbuilding industry, and with the conviction that if it does not result in a large increase of our tonnage in the foreign trade it will be strong evidence that the time has not yet come, and the field is not sufficiently inviting to American capital to invest in ships and extend our foreign trade under the American flag.

### **MERCHANT MARINE TO MEET**

The second annual convention of the American merchant marine advocates will be held in New York City at the Hotel Astor during the month of May under the auspices of the National Merchant Marine Association of the United States. It is expected to bring together a great number of representative commercial organizations throughout the country, as well as the leading American exporters. The specific dates have not yet been announced.



# BRITISH DOMINIONS

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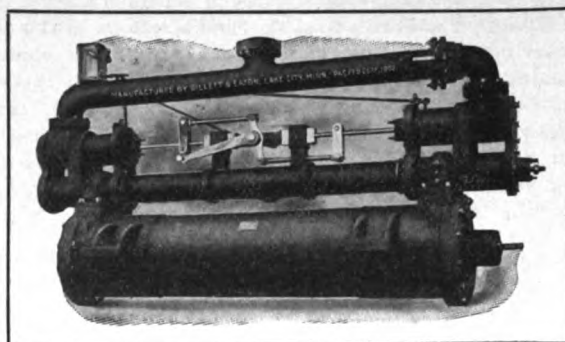
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NO CONNECTION  
WITH WHEEL SHAFT



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NEXT ISSUE

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## A. J. MORSE & SON, Inc. DIVING APPARATUS

FIRE SUPPLIES AND THE  
INVINCIBLE NOZZLE ::::

221 High Street

BOSTON, MASS.

### WILL AN INTERNATIONAL LOAD LINE BE ADOPTED?

**W**ITH keen interest and some satisfaction, we note the announcement of an international conference to be held in London, England, this autumn, to discuss the vital question of the load line and its international adoption.

No marine publication in this country has editorially commented more urgently and thoroughly on the importance and utmost necessity of a load line to be adopted by the United States than *Pacific Marine Review* has in the November issue of 1911, under the heading of "Our Navigation Laws and Their Defects."

In this article the writer laid particular stress upon this maritime necessity, which Great Britain originated and which has since been adopted by other maritime nations of the world, such as the British Colonies, Germany, France, Holland, Japan, Norway, Sweden, Denmark, Spain, Austria, etc., whose load line regulations are now equally effective with those in force in Great Britain.

The assignment and acceptance of load lines is, in most cases, if not all, qualified by reservation in detail.

The frequency with which reports have been received that laden sailing ships have been damaged on their homeward-bound voyage to Europe is indeed difficult to comprehend and would indicate that it is of considerable importance to not only inquire into the cause of damaged vessels, but, if possible, to intrinsically study the cause of so many missing ships. It is generally supposed that the late, although slight, change of the load line is the principal reason why so many disastrous conditions are met with. As the writer set forth in his editorial:

"Why is the United States not included in the above list of trading nations and seemingly glorifying in its conspicuous absence? How is it possible that we, as the leading nation in high ideals and the furtherance thereof, with amazing opportunities for trade expansion on and from our coasts, bathed by the two largest oceans of the world, a country in possession of the largest navigable lakes in the world, be content with the ambiguous reference to "draught" in our navigation laws? It is indeed lamentable beyond words that the legislation of the United States government has so far not even attempted a revision of this antiquated and inadequate code and modernized along similar lines to that which other nations have adopted ever since they became trading nations of importance to meet the progressive conditions of time. The construction of this particular part of our law would not only become an obligatory and important safeguard for the traveling public, but would and must be of direct benefit to the shipowner and shipper, with the added advantage of securing lower rates of insurance, both on ship and freight, which every classed vessel, with a definite assignment of freeboard, according to the nature of her employment and the season of the year can secure, provided such classed vessel is wisely managed, sanely operated and in every detail kept up to the high standard of the class it carries, thereby safeguarding the rights of the assured as well as the insured."

E. F.

### AMERICAN SHIPPING LINE TO SINGAPORE DESIRED

A Singapore firm which imports large quantities of American goods is very anxious to obtain the agency of a direct steamship line either from the Atlantic or the Pacific coast of the United States, as this firm could provide freight for such a line in both directions. The objections to the present facilities for shipments from the Pacific coast are principally the delay and lack of system in trans-shipment at Hongkong. One important effect which such delay is said to have on the local trade is the preventing of the importer from selling ahead, through his not being able to judge accurately the date of arrival of the merchandise in Singapore.

The objections to the present facilities from the Atlantic coast are the high conference freight rates. If a direct line were initiated, there would undoubtedly be sufficient cargo east and west, and the conference rates would be broken. The firm mentioned (whose name may be obtained from the Bureau of Manufactures) is willing to correspond with American firms interested in this proposition, and is in a position to give all statistics affecting this question.

A circular sent to firms dealing with the shipping conference announces that a rebate of 5 per cent on the freight paid will be granted to those exporters from Singapore, Penang and the Malay Peninsula to Europe, or to ports via Europe, who from January 1 to June 30, 1912, confine their shipments to the Nippon Yusen Kaisha. The circular reads in part:

"To those so confining their shipments for the entire twelve months ending December 31, 1912, a further rebate of 5 per cent on freights contributed up to June 30, 1912, and 5 per cent on those from that date to December 31 will be granted. To those who, on June 30, 1912, have so confined their shipments for the previous eighteen months an additional 5 per cent on freight contributed during the six months ending December 31, 1912, will be allowed.

"Until further notice, shipments made by the Peninsular and Oriental, Ocean Steamship Company, Ltd., Messageries Maritimes, North German Lloyd, Austrian Lloyd, Societa Nazionale di Servizi Marittimi, Compania Transatlantica of Barcelona and Cadiz, Glen Line (McGregor, Gow & Co., Ltd.), Ben, Mutual, Hamburg-American Lines, and by the German Australian, Rotterdam Lloyd, Stoomvaart Maatschappij Nederland, East Asiatic Company of Copenhagen, Russian East Asiatic Steamship Company of St. Petersburg, Russian Steam Navigation & Trading Company, Compagnie Francaise de Navigation de Chargeurs Reunis steamers to their continental ports of call, or ports adjacent thereto, and by any conveyances to Baltic and Black Sea ports, will not invalidate claims for the above.

"No 'returns' will be payable on freight contributed by rice, hemp, tobacco or treasure. Exporters applying for the returns, which will be payable in London, must fill up and sign forms obtained from the agents."

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### SEATTLE CONSTRUCTION AND DRY DOCK COMPANY LAUNCH STEEL WHALERS, "STAR II," "STAR III"

The steel whaler "Star II" was launched at the yards of the Seattle Construction and Dry Dock Company shortly before 7 p. m., March 21st, in the presence of a large assemblage of shipping men and representatives of the United States Whaling Co. Mrs. Elizabeth Russell, daughter of Alexander Baillie, of the firm of Balfour, Guthrie & Co., christened the vessel "Star II." There was not the slightest hitch in the ceremonies.

The "Star II," a graceful looking vessel of steel construction, 105 ft. over all, 19 ft. 6 in. in beam with a depth of 9 ft., is equipped with a 400 h. p. triple expansion engine capable of making twelve knots an hour and has mounted on her bow one of the latest type of harpoon guns. At the time of launching, the vessel was practically 95 per cent completed. On March 25th, four days after date of launching, the trial trip was held over the government course off Vashon Island, and proved all that her builders claimed for her.

The "Star II" is the first of a fleet of three whalers building at the plant of the Seattle Construction and Dry Dock Company for the United States Whaling Company. The "Star III," a sister ship to "Star II," was launched at 8 a. m., March 27th, and was christened by Mrs. E. Abrahamsen, wife of the manager of the United States Whaling Company. The trial trip was held March 31st and came up to all expectations of builders and owners. The "Star I" is well under way and will be launched about the middle of April. These vessels will be operated in South-eastern Alaska waters with Port Armstrong as their base.

In addition to the whaling vessels for the United States Whaling Company, two steel whalers for the Canadian North Pacific Fisheries are building at the yards of the Seattle Construction and Dry Dock Company, which will be launched during April.

### ALASKA PACKERS ASSOCIATION'S FLEET SAILING FOR ALASKA, 1912

Vessels—	Gross tons	Destination—
4-m. Barks—		
"Star of Greenland".....	2148	Fort Wrangell
"Star of Lapland".....	3381	Bristol Bay—Via Puget Sound
"Star of Scotland".....	2293	Karluk
"Star of Zealand".....	3292	Loring
Ships—		
"Bohemia".....	1633	Bristol Bay—From Puget Sd.
"Indiana".....	1488	Bristol Bay
"L. J. Morse".....	1394	Bristol Bay
"Santa Clara".....	1535	Alitak
"Star of Alaska".....	1716	Chignik
"Star of France".....	1644	Bristol Bay
"Star of Italy".....	1644	Bristol Bay
"Star of Russia".....	1981	Cook Inlet
"Tacoma".....	1739	Bristol Bay
Barks—		
"Star of Chile".....	1001	Bristol Bay
"Star of England".....	1943	Bristol Bay
"Star of Finland".....	1571	Bristol Bay—Via Puget Sound
"Star of Holland".....	2131	Karluk—Via Puget Sound
"Star of Iceland".....	1981	Bristol Bay
"Star of India".....	1381	Bristol Bay
"Star of Peru".....	1027	Bristol Bay
Barkentine—		
"Centennial".....	1287	Bristol Bay
Schooners—		
"Metha Nelson".....	460	Kodiak
"Premier".....	308	Bristol Bay—From Puget Sd.
"Prosper".....	241	Bristol Bay—From Puget Sd.
Steamers—		
"Alitak".....	115	Chignik
"Chilkat".....	173	Ft. Wrangell
"Jennie".....	128	Cook Inlet
"Kadiak".....	114	Bristol Bay
"Kvichak".....	1064	Bristol Bay
"Nushagak".....	681	Bristol Bay
"Unimak".....	258	Karluk

### NEW AMERICAN LINERS FOR THE NIPPON YUSEN KAISHA

The head office of the Nippon Yusen Kaisha, at Tokyo, Japan, has favored this publication with the particulars of its new American liners, T. S. S. "Yokohama Maru" and T. S. S. "Shidzuoka Maru," which are to be completed in the near future:

Gross tonnage, about 6,200 tons.

Length between perpendiculars, 400 feet.

Breadth moulded, 50 feet.

Depth moulded to shelter deck, 38 feet.

'Tween deck height, 8 feet.

Measurement cargo capacity, about 8,100 tons.

Dead weight capacity, about 7,100 tons.

Passengers, first class, nine cabins, 32 persons; third class, 265 persons.

Engine—Number and type, 2 sets of triple expansion; cylinder diameter, 20x33½x56 inches; stroke, 48 inches.

Boilers—Number and type, 4 single ended Scotch; dimensions, 14 feet diameter by 11 feet 6 inches long; working pressure, 200 lbs. per square inch.

Speed, 15 knots.

### COMMERCIAL MOVEMENTS AT PORTLAND, OREGON.

Lumber Exports From Portland. (Foreign)			
March.		Since January 1, 1912.	
Feet.	Value.	Feet.	Value.
2,213,587.....	\$ 22,424	20,041,187.....	\$ 200,205
(Domestic)			
14,967,052.....	157,154	35,657,052.....	369,521
Wheat Exports From Portland. (Foreign)			
Bushels.		Bushels.	
Value.		Value.	
632,358.....	\$563,265	\$2,101,564.....	\$1,824,443
(Domestic)			
162,662.....	148,022	490,528.....	431,749
Flour Exports From Portland. (Foreign)			
Bushels.		Bushels.	
Value.		Value.	
42,060.....	\$168,240	149,059.....	\$ 589,961
(Domestic)			
28,342.....	121,870	98,497.....	393,084
Tonnage Entered at Portland.			
March, 1912.....	81 vessels.....	96,626 tons	
March, 1911.....	64 vessels.....	88,639 tons	
Tonnage Cleared From Portland.			
March, 1912.....	79 vessels.....	95,591 tons	
March, 1911.....	65 vessels.....	89,917 tons	

### Principal Domestic Imports at Portland by Water.

	March.	Since Jan. 1, 1912
Asphaltum, barrels.....	2,752	11,065
Canned goods, cases.....	5,187	38,591
Cement, sacks.....	327,818	468,672
Coffee, sacks.....	645	1,219
Electrical goods, packages.....	1,854	3,448
Hardware, tons.....	1,896	5,975
Iron, packages.....	8,557	33,516
Leather and hides, rolls.....	584	1,521
Machinery packages.....	50	1,033
Merchandise, tons.....	2,331	6,672
Miscellaneous, packages.....	46,647	96,280
Oil, barrels.....	385,397	1,187,749
Paints and Oils, packages.....	7,805	18,717
Plaster, sacks.....	8,455	15,171
Salmon, cases.....	572	1,069
Salt, sacks.....	29,561	67,253
Sugar, sacks.....	55,064	122,721
Sulphur, sacks.....	4,210	10,216
Tobacco, packages.....	1,408	3,914

### Principal Foreign Imports at Portland.

Cement, barrels.....		12,600
Coal, tons.....	2,323	4,727
Curios and merchandise, packages..	1,771	5,562
Hardwood, feet.....	259,829	456,759
Hemp, bales.....	2,364	6,239
Peanuts, bags.....	2,300	8,535
Pepper, bags.....	50	350
Provisions, packages.....	1,152	8,104
Rice, sacks.....	2,812	5,327
Sugar, sacks.....	100	405
Sulphur, tons.....	125	720
Tapioca, bags.....	20	420
Tea, packages.....	1	796



## Announcement

### Season 1912

On and after March 1st all steamships operating between Seattle and Prince William Sound Ports will take the Inside Passage with stops at Ketchikan and Juneau.

Write for handsome folder. Ask about new Alaska tour.

## Alaska Steamship Company

General Offices, Lowman Bldg.  
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## Northern Pacific Railway

And Minneapolis and St. Paul

TWO DAILY THROUGH TRAINS

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COAST  
LIMITED



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Express when  
westbound)

Via North-Western Line  
from St. Paul, through  
Milwaukee, using new C.  
& N. W. Station, Canal and  
Madison Sts., Chicago.

Via Burlington Line  
from St. Paul, down the  
Mississippi, using Union  
Station, Canal and Adams  
Sts., Chicago.

COMPLETE IN EQUIPMENT

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Northern Pacific Famous Dining Car Service  
H. N. KENNEDY, G. A. J. O. McMULLEN, C. P. A.  
First and Yesler Way, Seattle  
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The Line to Gardiner, the Official Entrance to  
YELLOWSTONE NATIONAL PARK

Season June 15 to September 15

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Regular Sailings Between Puget Sound and Europe via

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FAIRFAX FOUNDRY COKE

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## LONDON ASSURANCE CORPORATION.

The report of this company for 1911 shows that in the life department new assurances were granted under 623 policies for £464,299, the premiums on which amounted to £14,739. Reassurances were effected for £63,000 at premiums of £1,622. The net premium income was £189,617 against £184,663 in 1910, and the total income from all sources amounted to £284,970. Interest earned was at the rate of £4 2s. 6d. per cent. The life funds on December 31, after paying so much of the quinquennial bonus as was taken in cash, and abatement of premiums, amounted to £2,508,979, as compared with £2,494,655 in 1910. The net fire premium income amounted to £661,170, the claims to £336,299 (50.8 per cent.), and the expenses and commission to £254,720 (38.5 per cent.). Out of the surplus of the year the fire fund was increased from £600,000 to £650,000, and £41,181 was carried to profit and loss account. The premiums from accident and general business were £12,173, and the claims were £3,282. This fund was increased from £12,570 to £17,258. The marine premiums were £324,323, and after transferring to profit and loss account £12,712 the marine fund was increased from £330,000 to £350,000. The capital and leasehold redemption account amounted to £2,454. The total assets of the corporation were £4,729,002, compared with £4,608,955 at the close of the previous year. The amount at the credit of profit and loss account on December 31 was £157,203, out of which the directors recommend the payment of a dividend of 20 per cent. for the year, which will absorb £89,655.

CALIFORNIA MARINE INSURANCE BUSINESS  
FOR 1911

The marine insurance business of the State of California for the year 1911 showed better general results than for several years past. The total premiums written amounted to \$2,170,761, a decrease over the previous year of \$9,400, while the losses paid amounted to \$1,319,785, decrease over the previous year of about \$370,000. The percentage of losses to premiums was 60.8%, as against 77.5% for 1910 and 70% for 1909.

The Western Assurance Company shows a loss ratio of about 200%, but as this company stopped writing on the Coast in June, any comparison is unfair. The Thames & Mersey shows a loss of over 100% for California, but taking the entire Pacific Coast business into consideration, the loss ratio falls to 39.1%. With the exception of the United States, Lloyds, with a loss ratio of 97.2%, and the Providence Washington and the St. Paul, both showing a loss ratio of 96.7%, the companies show a marked improvement over the previous year. In fact two companies have the unique distinction of showing a profit in their loss account. This by reason of salvages recovered on account of losses paid in previous years exceeding the amounts paid out in 1911. The Federal Insurance Company, with a premium income of \$5,397, had a loss ratio of about one-half of one per cent.

WRECKS, CASUALTIES AND MISCELLANEOUS  
REPORTS

"ROSECRANS," tank str., went ashore on the rocks near Gaviota, Cal., on March 12th, but was floated on April 2d, and taken to San Francisco. Steamer valued at about \$100,000. Not insured.

"MANCHURIA," str., while loading at her pier at San Francisco on March 17th, fire broke out in No. 6 hold and it was necessary to flood that compartment to extinguish the fire. The cargo affected consisted largely of cotton and government supplies for Manila. Damage to cargo about \$60,000, and to steamer about \$30,000.

"WEIDING BROS," fishing schr., went ashore at Whidby Island, Puget Sound, and at latest advices was in danger of breaking up.

"ENTERPRISE," str., from San Francisco March 23d for Hilo, broke tail shaft and was towed back to San Francisco by the Str. "Lurline." Part of the cargo was discharged and repairs made.

"S. N. CASTLE," at Honolulu March 22d from Fanning Island, had been ashore during the passage and part of the cargo was discharged to make repairs.

"HAZEL DOLLAR," Br. str., from Columbia River for Taku with lumber, put back to Victoria on March 27th with rudder stock broken and other damage.

"HARLESDEN," Br. str., while loading cotton at San Francisco, caught fire March 28th, but the blaze was extinguished without difficulty. About 60 bales of cotton were damaged by fire and water.

"ALASKAN," str., from Kahului for Salina Cruz with cargo consisting mainly of sugar, caught fire during the passage. But little damage is reported.

## TRAFFIC VIA TEHUANTEPEC ROUTE

There was a great increase in traffic over the Tehautepec route (Tehautepec National Railway) in the last fiscal year. The following are the figures in metric tons (2,204.6 pounds each), compared with the previous fiscal year ended June 30, 1910:

	1909-10 Tons.	1910-11 Tons.
Transshipments.		
Salina Cruz to Puerto Mexico.....	366,826	478,888
Puerto Mexico to Salina Cruz.....	265,046	445,202
Total .....	631,872	924,090

The increase in the movement of merchandise from west to east was 46 per cent and from east to west 70 per cent. The calendar year 1911, for which official figures are not yet available, will show that the increase continues and the total transshipments for the year will run considerably above 1,000,000 metric tons.

The bulk of this traffic arises from the freight brought to Salina Cruz and Puerto Mexico by the vessels of the American-Hawaiian Steamship Co. It is understood that this company has given definite notice to the Tehautepec National Railway of its intention to use the Panama Canal when the same is ready for business. The effect of the withdrawal of this fine fleet of American freighters from this Tehautepec route will be far-reaching so far as concerns this isthmus.

## IMPROVEMENTS AT THE PORT OF PORTLAND

M. Talbot, general manager of the port of Portland, advises that the United States government has laid out a 30-foot project from Portland to the sea, that is, the Columbia and Willamette Rivers are to be 30 feet deep at low water. To further this work, the port of Portland commission is building a new steel hull 30-inch suction dredge, to work with one 30-inch and one 20-inch dredge they now have. The government also has plans for two dredges costing about \$400,000 each for the same work. The river is now dredged to 25 feet at low water.

The dock commission of the city of Portland which is entirely separate and distinct from the port of Portland, has plans for the improvement of the Portland harbor under consideration and sometime ago employed a committee composed of three expert engineers from New York to look over the ground and make suggestions relative to the improvement of the docks, wharves and harbor in the city of Portland. We understand that the report of this committee will be received in Portland shortly, at which time the dock commission will begin active work.

## CASES IN COURT

Merchants' & Miners' Transp. Co. v. Robinson-Baxter-Dissosway Towing & Transp. Co. et al. General Chemical Co. v. Merchants' & Miners' Transp. Co. et al. Merchants' & Miners' Transp. Co. et al. v. Gildersleeve et al. (Circuit Court of Appeals, First Circuit.)

## 1. Collision—Steam vessels meeting. Fault:

A finding held supported by the evidence that a steamer was chargeable with contributory fault for a collision with the tow of a meeting tug on the Providence river on a clear moonlight night for failing to sooner reverse when it became evident that the tug, although having agreed to pass port to port, was keeping to the side of the channel on her left hand in violation of the rules.

## 2. Subrogation—Nature of right. Technical objections:

The doctrine of subrogation is one of equity and not of the common law, and, in its application, no attention should be paid to technicalities which are not of an insuperable character, but the broad equities should always be sought out as far as possible.

## 3. Insurance—Payment of loss. Subrogation of insurer. "Assured":

A towing company, owner of a tug and barges, procured an open policy of insurance "for the account of whom it may concern" on all lawful goods on board barges owned by it "against any and all risks and perils of fire and inland navigation and transportation, property of the assured or held by them in trust or custody as freighter, forwarder, bailee or common carrier." In accordance with the provisions of the policy, the company procured a certificate thereunder covering the cargo of one of its barges, "loss if any payable only to the order of" the owner of such cargo. Under an agreement between them, it paid the premium on the certificate, and added the amount to the freight. The certificate also contained the following: "It is agreed that upon the payment of any loss or damage the insurers are to be subrogated to all the rights of the assured under their bills of lading or transportation receipts to the extent of such payments." While in tow of the company's tug the barge was sunk in a collision, and the cargo was a total loss; the tug and the second vessel both being held in fault for the collision. The insurer paid the loss to the cargo owner. Held, that within the meaning and intent of the certificate the cargo owner, which paid the premium, was the "assured," and that the insurer was entitled to be subrogated to its right of recovery as against both vessels.

Granger et al. v. Providence-Washington Ins. Co. (District Court, S. D. New York.)

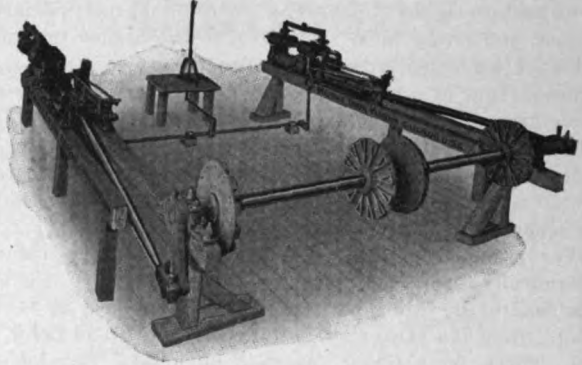
## 1. Shipping—Charter. Construction:

A charter party for the carriage of a cargo of lumber "dressed to size," providing that freight should be paid on the basis of standard cross-ties of given size, did not authorize the charterer to assume that rough cross-ties were meant, and to add in loading to the quantity of lumber shown by the bill of lading a percentage equal to the difference between a dressed and rough tie, and such understatement of the cargo, without the knowledge of the master, was a fraud on both the owner and insurer.

## 2. Insurance—Marine Insurance—Effect of Understatement of Cargo by Charterer in Bill of Lading.

Where charterers intentionally and in accordance with their custom understated the amount of a cargo of lumber in their bill of lading, which fact was material to the risk of an insurer of the cargo as shown by its testimony that, if it had been known, the risk would not have been accepted, and during the voyage it became necessary to jettison a part of the deck load, as claimed, because such

understatement induced the master to load an excessive cargo which rendered the vessel unseaworthy, the charterers were at least limited, as against the insurer, by the quantity stated in the bill of lading, even if the policy was not wholly avoided, and cannot recover on the policy, which did not cover a loss of less than 5 per cent, where the cargo delivered was within 5 per cent of the quantity called for by the bill of lading.



The above illustration shows a set of centralized valve gear, stern paddle-wheel marine engines, on which the eccentric rods, cams and links are eliminated. The engines illustrated are fitted with fixed cutoff valve; the larger sizes, however, being fitted with adjustable variable cutoff valves.

There are a great many advantages in this class of engines over the old style stern wheel type, one in particular being, that where the engines are operated in cold climates there is no chance of the eccentric rods freezing. This difficulty is entirely eliminated with the centralized valve gear design.

In brief the centralized valve gear, with M. I. W. adjustable variable cutoff valve; the main valve operated from the connecting rod and the cutoff valve operated from cross-head, has the following advantages:

First. Eliminates the eccentric rods, cams and links so annoying to river engineers, removing the difficulty very often experienced in the breaking of these parts, especially when boats are operated in shallow rivers where overhanging limbs of trees are liable to come in contact with the rods in question.

Second. Longer lengths of paddle-wheels are permissible. The room taken up on the shaft by eccentrics or cams, allows just that much more space for the paddle-wheel.

Third. All the valve gear is in sight of the engineer; always accessible without occasion to go outside the boat.

Fourth. No long radial arms to cause vibration. With this valve gear a smooth running engine is obtainable.

Fifth. With the variable cutoff there is a saving in fuel expense with engines operated under normal load, as well as an increase of power when occasion demands.

For quotation on complete installation or engine only, inquiries should be addressed to the Marine Iron Works, 2042 Dominick Street, Chicago.

Examinations from which to establish eligible registers for the positions of Keepers and Assistant Keepers of Light Stations and Mates and Assistant Engineers on Lighthouse Tenders, in the Sixteenth Lighthouse District (Alaska), will be held by the Local Civil Service Board, at Ketchikan, Alaska, on May 1, 1912, or as soon thereafter as practicable. Application blanks may be secured from the Lighthouse Inspector, Ketchikan, Alaska.

## LIQUID FUEL, WITH SPECIAL REFERENCE TO THE "DAHL" OIL-BURNING SYSTEM

**A**CAREFUL analysis of the character of the present tendencies toward economy, in the various methods of generating motive power, shows that, in all fields of application the movement is conspicuously in the direction of concentration of energy. With any kind of fuel the intensity limit is, of course, contracted by the sum of its heat-producing constituents; with liquid fuel we have a great and prima facie advantage, in the higher thermic value of its constitutional heat-producing elements—the hydro-carbons of a high molecular density forming a great percentage of this mobile and wonderful fuel. The mobile character of liquid fuel is such, as to ensure eventually, it will be in one form or another the motive power creator for all marine propulsion purposes, and this may generally be accepted as an accurate forecast.

For practical purposes the value of crude petroleum, thermically expressed, may be taken at 20,000 British Thermal units, in comparison with the best coal at 14,000 units; then the ratio may be taken as 7 to 10 in favor of oil. There is, however, another advantage represented by the higher factor of efficiency attainable by the use of oil fuel. Generally speaking, 57 per cent of the heating power of coal can only be attained in practice, whereas with oil fuel 70 to 80 per cent of the full thermic efficiency of the oil has been obtained.

The application of oil or liquid fuel to steam-raising purposes may be divided into four broad classes:

1. The gravity method.
2. The pulverisation method, in which the combustion of the oil is effected by the spraying of the fluid by the aspiration or introduction of steam or compressed air, for which purposes a special apparatus is employed.
3. The conversion of the oil into a gaseous condition before allowing it to meet the air previous to ignition.
4. The method of forcing the oil in small streams through small orifices, by simple plunger force pumps and projecting each stream on to firebrick blocks in such a way as to produce spray, which is then caught by a current of air, thus effecting combustion.

Space will not permit us to enter into detailed description of the various methods above referred to, or to the great variety of burners that have been used with the different systems, but we wish to draw attention to the mechanical burner manufactured by the Union Iron Works Company of San Francisco, which, it is claimed to be one of the best on the market today and is covered by the Dahl patents.

By a mechanical oil-burning system is meant a system that requires neither steam nor air for atomizing the oil. The oil is heated to a proper temperature, is forced through the burner at the required pressure, the passages in the burner are such that the oil is thoroughly broken up before being discharged, so that it immediately volatilizes, obtaining a perfect flame as soon as the oil leaves the burner. The pressure under which the oil is forced through the burner and the size of the tip regulate to a nicety the exact amount of oil that can be burned. The quantity of oil can be varied to some extent by the pressure and more by the size of the tip used in the burner. The furnace fronts are of approved construction and so arranged that the burner passes through a pipe on the end of which is a cone or deflector, which can be adjusted by moving it in or out to secure the proper quantity of air there, where it is needed. The front is extended so that the whole length of the furnace is utilized, and the brickwork is so fitted that repairs and examinations can be made without removing it.

In the case of boilers with extended fronts similar to those used with the Howden's system very little change is necessary to adapt them for receiving the new "Dahl" system.

The pressure of the oil can be varied from 30 pounds to 200 pounds to the square inch, and the temperature may be varied from 150 degrees to 260 degrees Fahr. The system consists primarily of a pump, heater and burner, although in practice two pumps and two burners are fitted, so that in case of breakdown, or in a case of overflow there will always be one pump and one heater in reserve. Every care has been taken to make the system as simple and as nearly "fool-proof" as possible. In addition to the advantages claimed in ordinary practice, the system is absolutely noiseless, and therefore has this recommendation for its adoption on passenger steamships, ferry boats, steam whalers, etc. It is interesting to compare the following data taken on trips of vessels fitted with this oil-burning system, showing a remarkable saving over other methods of burning fuel:

S. S. "Leelanaw"—Coal or old oil installation: Bbls. per Naut. mile, .5391. Oil, Dahl system: Bbls. per Naut. mile, .4581; 15 per cent saving. Remarks: Saving over mechanical burner.

S. S. "City of Para"—Coal or old oil installation: Lbs. per I. H. P. per hour, 2.32 lbs. coal. Oil, Dahl system: Lbs. per I. H. P. per hour, 1.259; 45.7 per cent saving. Remarks: Saving over coal.

S. S. "Maverick"—Coal or old oil installation: Lbs. per I. H. P. per hour, 1.44 lbs. oil. Oil, Dahl system: Lbs. per I. H. P. per hour, 1.24; 13.88 per cent saving. Remarks: Saving over steam atomizing burners.

S. S. "Pectan"—Coal or old oil installation: Bbls. of oil used per day, 285. Oil, Dahl system: Bbls. of oil used per day, 246; 13.68 per cent saving. Remarks: Saving over steam atomizing burners.

The heaters are cylindrical shells of cast iron with bolted heads, designed so that the entire coil may be removed for cleaning or examination. The shells are tested to 300 pounds per square inch, and the coils to 400 pounds per square inch hydrostatic pressure in the shops. All joints on coils are made outside of the shell, making it most simple and accessible. The oil entering the first coil passes through the full length of three coils before entering the burner.

The simplicity of operating the "Dahl" oil-burning system is one of its principal features. The burners may be regulated for any change in speed of the engine by opening or closing a steam valve on the fuel oil pump, thus the whole system may be handled from one point, making adjustment at the burners unnecessary. The burner will ignite when the pressure in the oil line has reached 30 pounds. It should be further noted the saving in water used in atomizing with steam is another and important item on shipboard. During the later half of 1911 upwards of twenty-eight large steamships were fitted with this system, with a collective I. H. P. of about 100,000. These installations include vessels owned by the P. M. S. S. Co., Canadian Pacific Railroad Company, Grand Trunk Pacific S. S. Co., etc. The "Prince George" of the latter company's fleet has recently and successfully completed her first trips with the new installation.


Subject to the completion of the audit of the accounts, the directors of the Cunard Steamship Company, Limited, have decided to recommend the following dividends for the year 1911: On the preference stock 5 per cent per annum, on the ordinary shares  $7\frac{1}{2}$  per cent per annum; both dividends payable less income-tax.



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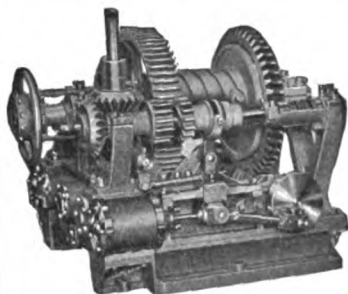
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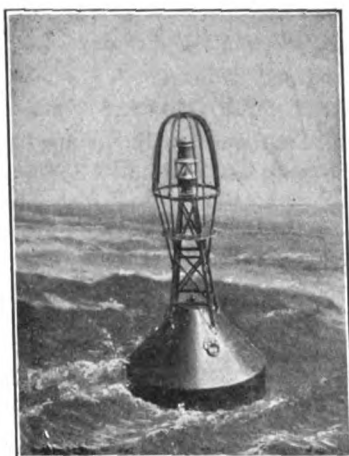


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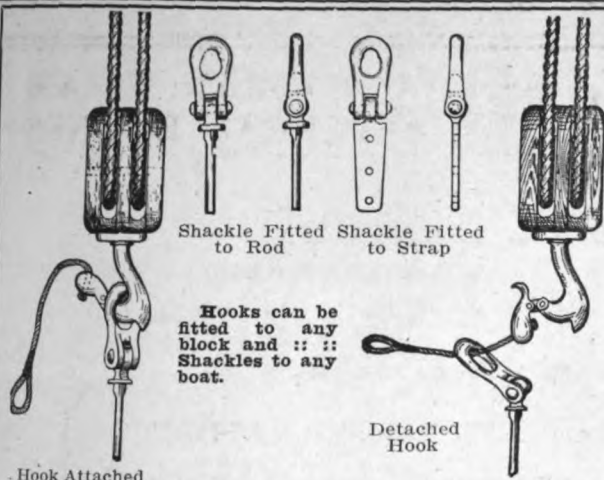
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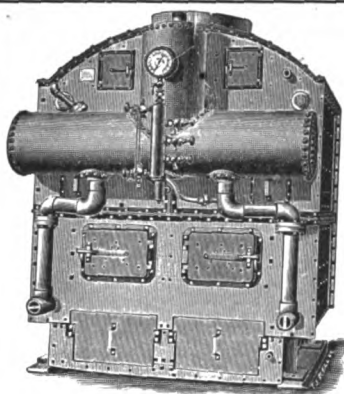
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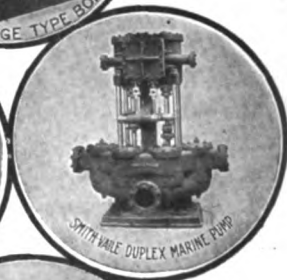
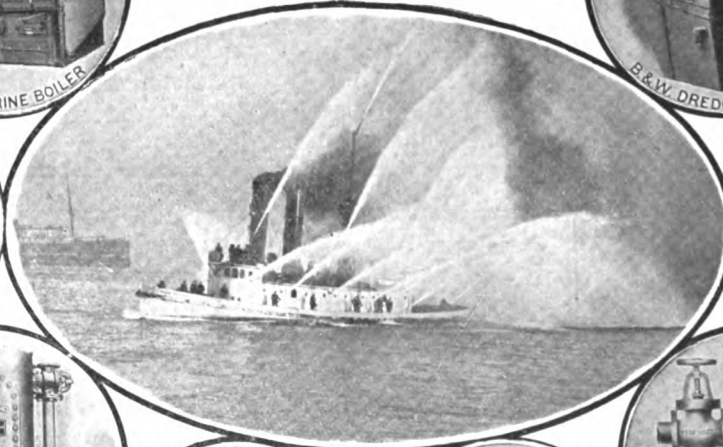
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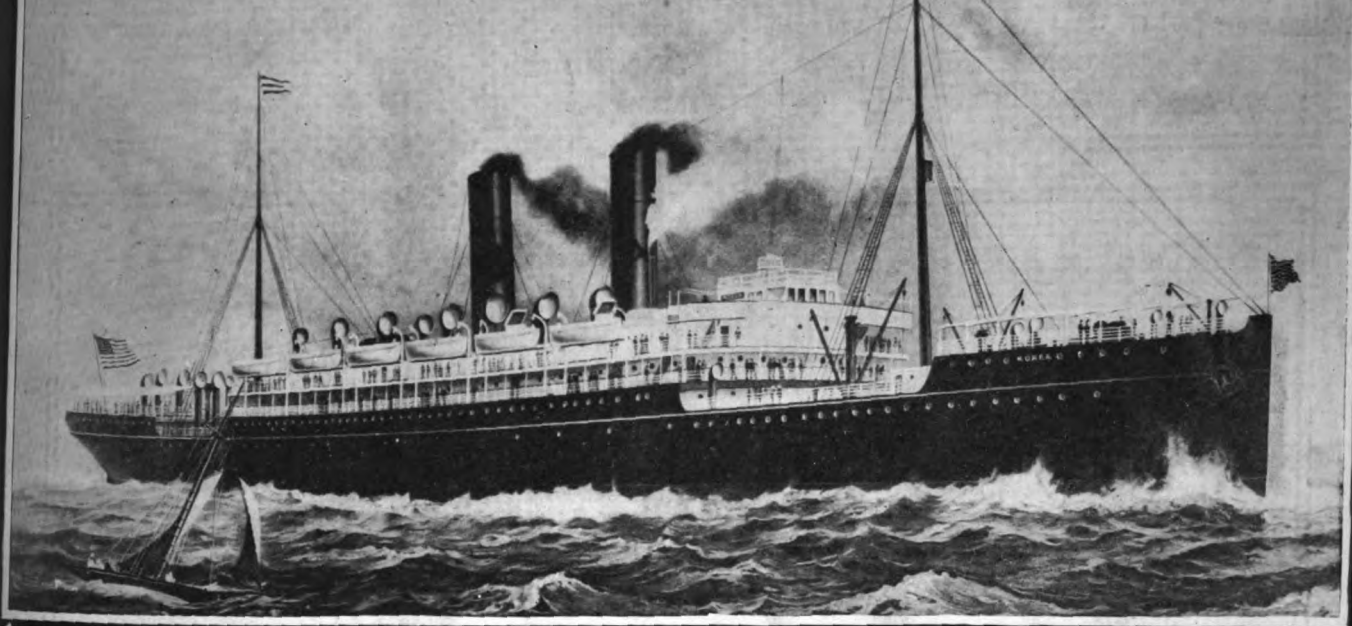
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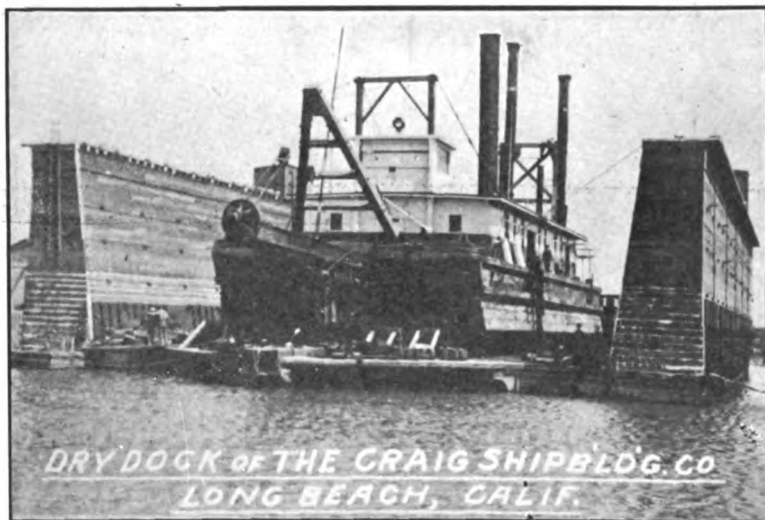
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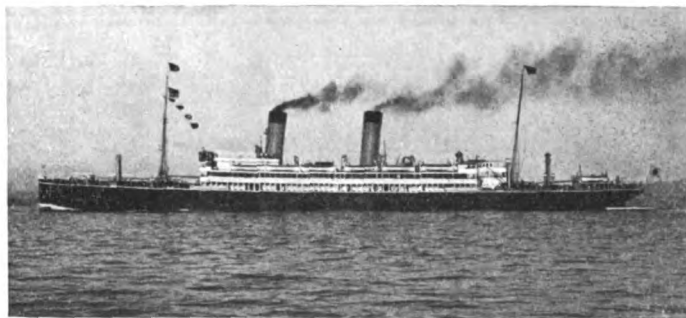
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# PACIFIC MARINE REVIEW

(Copyrighted May, 1912, by Pacific Marine Review)

VOL. IX

SEATTLE, WASH., U. S. A., MAY, 1912

No. 5

## PANAMA CANAL, ITS PROBABLE INFLUENCES

Interesting Statement by Herr Ballin, Director General of the Hamburg-Amerika Line

I AM indebted to Mr. Rudolph Falcks, General European Agent of the Southern Pacific Railway and Allied Companies at Hamburg, for the subjoined translation of an interesting statement to the "Berliner Tageblatt" by Director General Ballin of the Hamburg-Amerika Line, the largest steamship company in the world, and a man who is considered one of the most competent of steamship authorities.

I note with interest that Herr Ballin confirms the view which I have so often and previously expressed, that the predominating influence of the Panama canal will be in the increase of domestic traffic, in beneficial competition with transcontinental rail lines between United States Atlantic and United States Pacific ports, and that he also emphasizes, as I have done, that the Panama canal will re-route and to some extent intensify existing international commercial intercourse more than it will create and discover new international commercial intercourse, and that he very prudently, at least by inference, recommends steamship lines to proceed cautiously in regard to the many ambitious programmes which have been unofficially rumored and authorized.

H. B. JAYNE.

"The request of the 'Berliner Tageblatt' to express my opinion as to the effects of the Panama canal is one that is rather difficult to fulfill. I will, however, endeavor in a curtailed form to speak on some of the most important points.

As is the case with the inauguration of all new routes for commerce, the Panama canal will undoubtedly have the result of effecting considerable changes in connection with transportation, and the question that arises is, what nature will these modifications assume? It is equally certain that many shipping lines will endeavor to find new spheres of action through the Panama canal, as experiences teaches that the creation of new routes encourages speculation looking towards the possibility of large profits.

Among the large shipping companies, English, German and others state that they have investigated the possibilities of the canal and are considering the establishment of new lines through that channel.

One does not need to accept these declarations all too seriously. In many cases the bases will only be the intention such as one may have who leaves his umbrella on a chair and believes thereby to have secured the seat.

It is not my intention with these observations to restrict the importance of the canal. Its signification for the commerce of the world and in particular for the trade of the United States with countries on the west coast of South America is best shown by statistics relating to the changes in distance which will result in routes from New York and from German ports. The table is given herewith:

### Distances from Hamburg to West Coast of America.

	Via Magellan Straits	Via Panama Canal	Via Suez Canal	Via Cape of Good Hope
Valparaiso .....	9,285	7,731	.....	.....
Iquique .....	10,056	7,144	.....	.....
San Francisco.....	14,075	8,402	.....	.....
To East Asia.				
Manila .....	.....	14,621	9,908	13,238
Hong Kong .....	.....	14,570	10,040	13,466
Kiautschou .....	.....	13,924	11,142	14,568
Yokohama .....	.....	12,923	11,757	15,183

### Distances from New York to West Coast of America.

	Via Magellan Straits	Via Panama Canal	Via Suez Canal	Via Cape of Good Hope
Punta Arenas .....	7,022	6,031	.....	.....
Valparaiso .....	8,447	4,606	.....	.....
Guayaquil .....	10,385	2,851	.....	.....
Panama .....	11,025	2,028	.....	.....
San Francisco.....	13,237	5,277	.....	.....

### To Australia.

Sydney .....	12,701	9,707	13,437	13,015
Honolulu .....	13,400	6,696	.....	.....

### To East Asia.

Manila .....	11,496	11,532	13,570	.....
Hong Kong .....	11,445	11,664	13,798	.....
Shanghai .....	10,809	12,489	14,623	.....
Yokohama .....	9,798	13,381	15,515	.....

The above tables show at a glance that a drastic curtailing effect in distance will result in connection with trade between the Atlantic and Pacific ports of the United States.

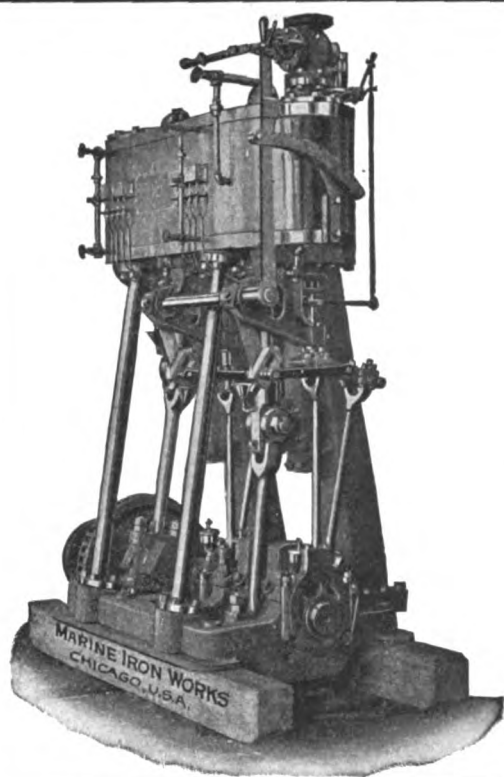
The transportation of bulk cargoes and also a considerable proportion of general merchandise would no longer be directed via the lengthy overland lines of the North American continent, but would revert to maritime transportation, which, under the circumstances, must be cheaper unless the great American railroad systems enter into a tariff war in order to retain this trade. It is, however, to be anticipated that in view of the much reduced cost of transportation by water, such a rate war would be decided in favor of the maritime routes.

If the question is now raised as to the importance of the canal for German shipping and to what extent German shipping will participate in the newly created trade, it must first be remembered that commerce between American ports is, in virtue of American legislation, confined to the American flag. It follows from this that the American mercantile marine will in future experience great augmentation and it would be stupid on our part if we did not view this growth of the American mercantile marine with the greatest good will. Foreign shipping companies interested in the North American trade have undoubtedly contributed greatly to the present prosperity of the United States, and the United States owes very much to them. Notwithstanding this, they are actually subjected to constant attacks and must submit to decisions of the United States government for a legal investigation as to whether these companies are entitled to consummate arrangements in their foreign domiciles tending to exclude ruinous competition between one another.

Inasmuch as the United States will no doubt be in a position to create for itself a large mercantile marine, it is to be hoped that they will learn the imponderabilities which are necessary for the upholding and protection of a mercantile fleet, and that they will then be better posted in respect to the importance and use of such a fleet.

With regard to the participation of the German flag in the trade to the Panama canal, it may be stated with certainty that a part of the commerce to the west coast of America will be diverted through the Panama canal and that also the large trade in salt petre will particularly be routed that way. To what extent this will be the case de-





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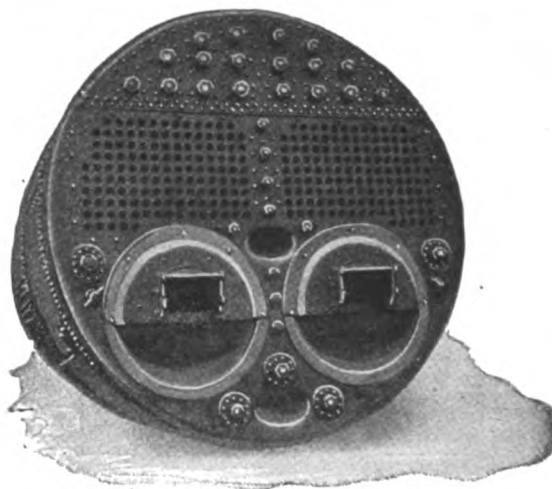
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pends, of course, upon the establishment of the tariff for the canal.

Considering the healthy views of Americans for such things, it may be taken for granted that the tariff will not be fixed so high as to preclude the attraction of such commerce which is considerably desirable. The calculation of the tariff in itself is very simple. It is only necessary to calculate what a steamer of medium speed utilizes and expends in the way of coal, wages, time, insurance premiums, etc., when choosing the passage via the Magellan straits, and the tariff must then be so arranged that ship-owners perceive an advantage in sending their boats through the Panama canal.

It has been reported that I am about to visit the Panama Canal. This statement is erroneous. Undoubtedly it would be a very interesting trip, but the profit from a business point of view would not be in proportion to the loss of time. A visit of this description appears to me to be one of greater interest to engineers who would like to see this new undertaking in the interest of their profession. On the other hand I had the pleasure to talk over the question of Canal with Colonel Geothals, the

Director of the Canal Construction, who recently visited me in Hamburg, and I received from him the assurance that, provided nothing abnormal cropped up, he hoped that in August of next year mercantile ships of medium size and limited in number would be able to traverse the Canal and thereby commence operations on a small scale. The official inauguration of the Canal and the utilization of same by the American ships of war will, it is said, only take place with the beginning of the year 1915.

I should like to condense my observations somewhat in stating that the Canal will undoubtedly present great facilities to commerce and at the same time entail changes in commerce which will make themselves felt in many ways. Also, one may calculate upon a more rapid development of the countries on the West Coast of America, but, on the other hand, it should not be forgotten that it is not a question of opening up new extensive territories, but, in the first place, of bringing those already known and partly exploited into closer and easier relations to North America and Europe.

(Signed) ALBERT BALLIN.

## SHIPPING AND OTHER LEGISLATION IN CONGRESS

### Tariff Reform, Presidential Elections, Etc.

THE Pacific Marine Review is pleased to hear from the Hon. William Sulzer, chairman of the Committee on Foreign Affairs, that he is making progress with his preferential duty bill to restore the merchant marine.

This publication, which for the past seven years has been prominently identified with legislative efforts to rehabilitate the American merchant marine, has always contended that dead-weight cargoes inwards and outwards, in short, sufficient and permanent traffic, are the best subsidies, and that such traffic would be best developed and stimulated by reasonable reductions in tariff, reciprocal international commercial intercourse and the construction of American steamships stimulated by a reasonable and special preference in favor of American registers, which is practically the foundation of Mr. Sulzer's measure and the sound and sensible principle he follows in commercial legislation. For example, if steamers go down from New York to Brazil and the Argentine with manufactured articles of iron and steel, it is only reasonable, and in favor of merchant, steamship owner and shipbuilder, that they should return with cargoes of coffee, hides, rubber, grain, etc., which should be admitted at minimum duties, and it is perfectly reasonable and good business that the United States, or any other country, should still further specially prefer imports carried in steamers of their own nationality.

In the Trans-Pacific trade if pig iron and/or iron ore were admitted at nominal tariffs and specially preferred in United States registers, it would have a very beneficial effect upon United States Trans-Pacific Trade, Commerce and Navigation. Personally we shall welcome a reasonable reduction in tariffs, not a sensational or destructive reduction, without regard to values and investments created and made on faith of pre-existing tariffs.

As we wrote at the time of the alleged Payne-Aldrich tariff revision, when men like Cannon, Aldrich, Payne, and for that matter then equally President Taft, were deaf to the outcries of an overburdened public and to "the writing on the wall," prices were and are still too high from Honolulu to New York.

At the time of the Russian-Japanese war the writer often wrote of the "titanic" struggle of the future, and the early future will not be a war of strife and bloodshed, but the more serious and keener industrial struggle be-

tween the low cost of production on the Eastern Hemisphere and the high cost of production on the Western Hemisphere; predicting that this would become imminent as soon as "quiet possession of property" and "validity of contracts" were established throughout China."

Within these few years progress to that end has been rapid and while we consider that the two essentials "quiet possession of property" and "security of contracts" are still many years distant, still economic, commercial and social reform in China is a present and pressing factor.

Already several large steamship owners in England, whose fleets trade, via the Suez, to the Orient, have under consideration following the practice of the United States and Canadian Trans-Pacific fleets and transferring their major repair stations to the Orient. Comparative tenders as between ports in the North of England and ports in the Orient are very instructive.

If Europe and the United Kingdom feel the stress of Oriental competition, much more will the United States with its present excessive tariffs and excessive prices. It needs foreign as well as domestic markets, which are best developed by reasonable tariffs and reasonable reciprocal international commercial intercourse, not by self-seclusion and excessive costs of production.

We care very little who is the next President of the United States, but we care a great deal for the future fiscal policy. Reasonable tariff revision, reciprocal commercial intercourse and a gradual lowering of prices is demanded for both domestic and foreign commercial welfare.

The shipping business suffers from high costs of construction, high fixed charges, costs of operation, etc.; in short, suffers from excessively high prices, as numbers of industries suffer in the United States, particularly when forced to compete in foreign markets.

President Taft has been neither a great success nor a great failure and is undoubtedly a much-subdued man, who has learnt much in the school of experience, and probably would perform a useful second term of office. On the other hand we must remember that much beneficial legislation has been forced upon the Republican party by the persistent and uncompromising attitude of the Democratic party and its leaders and its press, which and who have

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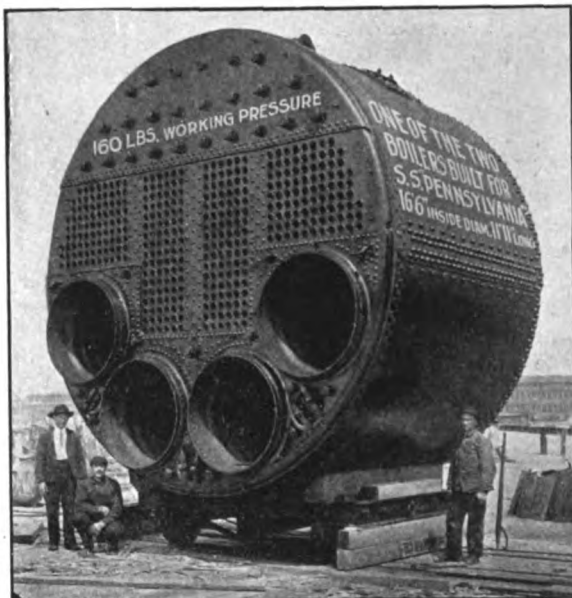
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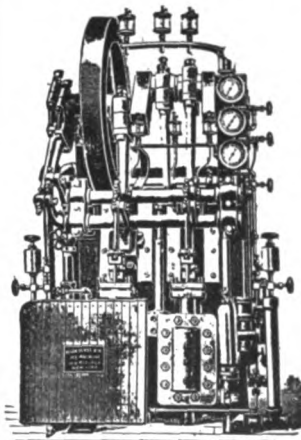
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used their majority in the House and practical balance of power in the Senate temperately and wisely.

We refrain from making any predictions or prophecies, but it would neither surprise nor disappoint us if the Democratic party won the next presidential elections.

We only hope that the party will in the final stages suppress Clarke, whose indiscreet and foolish utterances con-

cerning annexation of Canada when Canadian reciprocity was under discussion, has conclusively shown his unfitness for the presidency, and that it will also successfully keep Bryan out of sight. Roosevelt seems to have degenerated into a man better suited to a circus-tent than the dignified occupancy of the White House.

(Signed) H. B. JAYNE.

## STATEMENT OF PACIFIC COAST STEAMSHIP COMPANY CONCERNING THE SEAMAN'S BILL

**T**HE subjoined, which contains not only valuable suggestions, but clear, equitable and justified objections to House Bill No 11372, known as the Seaman's Bill, drawn by Representative Wilson of Pennsylvania and published in full in our March issue, has been compiled by the law firm of Farrell, Kane & Stratton, representing the Pacific Coast Steamship Company. We deem this a fit reply to Mr. Wilson and those applauding and approving such a retroactive measure.—Ed. Note.

To the Honorable the Committee on Merchant Marine and Fisheries, House of Representatives, Washington, D. C.—

Gentlemen: It has been the practice of this company for a long time past to regulate the watches upon its ships at sea in the manner provided for in the bill referred to, which method was suggested by the Seamen's Union, and found to be practicable and suiting the comfort of the men, it was consequently adopted by this company. So, too, this company, complying with the union rules, has adopted nine hours as a day's work while in port. But while these are the rules they are not arbitrary rules. They do not put the crew over the master, nor afford the means of crippling good service, as would be the case if such rules would be enacted into the law in the manner proposed by the act before your honorable body. As the rule stands now, seamen are earning higher wages than many of the officers on board Pacific Coast boats. Time and time again men in the service have rejected offers of promotion because the new position did not offer them the pecuniary advantage over their present station. The principal reason for this is that the men under union rules are paid a handsome premium for the overtime which they put in. Under the proposed law nine hours would practically be the limit of the day's work, and with these nine hours ended, if the ship happened to be in a safe harbor, work aboard must stop for the day. If it does not, the master may, at any time during the voyage, find himself confronted with men who, although they consented to work overtime and drew the extra pay for such overtime, and who planned a desertion when they signed the ship's papers, now use the breach of this law as a means of obtaining the whole amount of pay that they have earned during the voyage. Such a condition in the Alaska service would be a serious one. In that service the ships need every man in their complement to keep up their schedules, and in that service the inducements to desert are great enough without adding to them the additional inducement of full pay when they leave. Seamen cannot be obtained in these northern ports.

Again, who is to say what work is necessary and what work is unnecessary to be performed on Sundays or holidays? Are the seamen to be the judges? Some of the ships of this company touch ports in different states. The service between Puget Sound and California points has come to be known as an "express service" for freight and passengers. The pride of this service is its accuracy to schedule—every hour has its place for the ship to be. It very often happens that in keeping up this schedule the ships come into one state on a day that happens to be a

legal holiday in that state and may or may not be so in the place from which they sailed. These ships, just like railroads, must operate on Sundays and every other day. They cannot delay because the day they are in port happens to be a legal holiday or Sunday. Such a delay would not only mean a disarrangement of their whole schedule, but would also mean a delay in the transit of perishables, such as fruits, vegetables, etc., of which our cargoes are largely composed. Take the case of a coastwise steam vessel sailing on a regular schedule which requires that the entire sailing time between given dates be utilized to the best advantage in order that the vessel may maintain its schedule, there being in the course of a single voyage a number of incidental stops for the discharge and receipt of passengers, freight and mails, and it may be a mail contract based upon such schedule which requires that the mails be transported between given points within a given time. Such a vessel reaches a safe port enroute at, say 1 o'clock a. m. of a Sunday or some holiday, having on board passengers and their baggage, freight and mails to be there discharged and others there waiting to be received on board. Under the provision quoted the seaman might insist that he was required to do no duty during the whole of that Sunday or holiday, the result of which would be to tie the ship up in such way-port for twenty-four hours—this although the service of the crew for fifteen minutes or three or four hours during such Sunday or holiday might be all that was required to discharge or receive passengers, baggage, freight and mails and proceed on the voyage. Taking the general scope of the bill as intended to relieve a seaman from labor on Sundays and holidays: The seaman might claim that the work of receiving and discharging referred to was unnecessary, and therefore such as the law excused him from performing on a Sunday or holiday, and if the services of the seaman were demanded and insisted upon he might then demand his discharge and pay. We cannot think that you will desire to enact a statute which would entail such unreasonable results. Such legislation will, in effect, "straight-jacket" the merchant marine by making arbitrary rules for hours and times of service of the crew in a business in which, by reason of its vicissitudes and nature, arbitrary hours, or days, of service cannot be maintained without seriously impeding, crippling and delaying the service which the merchant marine renders the public. The purpose of the bill seems to be to place service on board vessels on the same footing as service on shore, ignoring the fundamental difference in conditions. An employer on shore has at all times the ability to supply the place of one leaving his employ.

The ship's master, on the other hand, may often be at a place where a seaman cannot be obtained; or, if obtained, only after an extended delay. If one or two men on shore leave an employer of a hundred it does not stop the works or the work of the others. If a ship's crew be depleted the ship is tied up and the time of her entire crew wasted; her passengers are delayed in reaching their destination and freight and mails are delayed in delivery.



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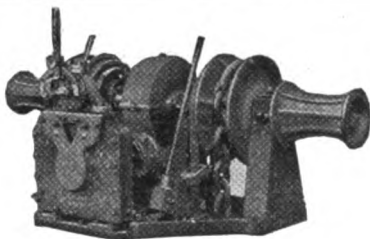
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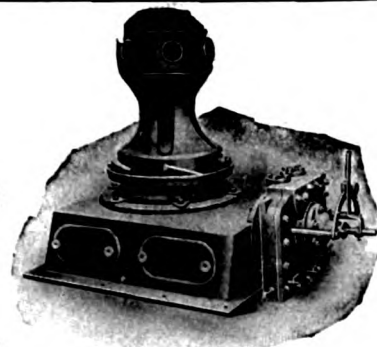
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WHEN WRITING TO ADVERTISERS, PLEASE MENTION THE PACIFIC MARINE REVIEW

That a seaman should be bound to his ship, and the ship to the seaman, for the stipulated voyage, is a necessity of the conditions attending each, and has so been regarded from the beginning.

In fact, such a rule would mean a general weakening of the efficiency of steamship service on the Pacific Coast. To northern points this would mean the delaying of the mail. It would mean a handicap to our own ships by our own laws in competition with ships that sail north from our adjacent Canadian ports. In the interstate service it would mean the adding of additional obstacles to be overcome by water carriers in their now unequal competition with carriers on land.

We submit that if the purposes of this act is to encourage men to go to sea, this part shoots far of its mark, because it deprives men of one of the most lucrative parts of their employment, and while doing so also works mischief to the interests of up-to-date American ships.

Second. On page 4 of the proposed act, section 4530 is so amended that upon forty-eight hours' demand a seaman shall be entitled to one-half his wages then earned. To our mind this provision would simply be an invitation to desert. During the summer months the Alaska country<sup>x</sup> offers big wage inducements to men in the Northwestern States, but the fare that is paid in going or coming lessens their season's earning. If a man can sign up on a ship and earn one-half wages while he is enroute he will do so, for that money earned will be enough to pay his way into the interior. Consequently there is just this extra incentive to desert in a country where desertions during the spring and summer months are already too prevalent. This provision can do the sailor himself no good, nor will his family be benefited by it. There is no good purpose to which a sailor can use his money while enroute along the Pacific Coast. Prices vary but little in the different states at which he touches. Besides, as a rule, a sailor is not a frugal man. Such a rule simply means, instead of having his full pay to turn over to his family when he returns to his home port, he will only have half of it; the other half will be spent in having a so-called "good time" in the ports where a stop for any appreciable length of time is made. This is not only a detriment to himself, but a detriment to the service, for a dissipated man cannot do a man's work.

We say this not because we disrespect the sailor as a man, but because we who come in daily contact with him know too well his shortcomings. Furthermore, such a provision will necessitate an expensive system of accountancy, where now the present one is comparatively simple, and all this to no good purpose. We know of no reason why it should be necessary for a sailor to draw his pay when he sees fit. His needs do not compare with the needs of employes on land, and yet they are content to receive their wages once a month.

Third. On page 6, the present law is amended so that the crew space upon all vessels of over two hundred tons shall, after June 30, 1912, comprise not less than one hundred cubic feet and not less than sixteen feet floor or deck space. The present law provides that the space shall be not less than seventy-two cubic feet to the man and not less than twelve square feet deck measurement. To a vessel that carries a crew of twenty-five men this amendment means that she must have an increase of her crew space of 100 square feet in the deck or floor and 560 cubic feet. This act is to take effect on ships that are already in commission.

It seems to us that the mere mention of the changes that this act will necessitate is enough to convince fair-minded men of its injustice. The act in its nature is retroactive, and means that every ship whose crew space

does not already comply with its terms, regardless of the fact that its builders lived up to the law at the time she was built, must now be torn to pieces and her whole structure remodeled. This act contemplates both a change in depth and breadth. Ships are not like houses, to which an addition can be added to suit every whim. They are confined to the length and breadth of their hull. If certain compartments are to be added to, others must suffer a loss. Crew's quarters, as a rule, are forward, and if it is possible at all to extend them, it must be done at the sacrifice of carriage space, and the sacrifice of carriage space means the sacrifice of profits. Furthermore, the cost of remodeling would be enormous, and necessitate the ship being taken out of service for some time. The act contemplates that this all should be done before June 30, 1912.

At the bottom of page 6 and on page 7 the act makes new provisions for washing outfits, shower baths, etc., all to be installed before June 30, 1912. The objection to this provision is the same as to the previous one—it simply means a remodeling of the ship's structure. According to the act there must be two separate outfits, one for the firemen and one for the crew, and since the one for the firemen must go amidships, it is only practical to suppose that the other would go there too. On ships that carry passengers this would mean a complete reconstruction of that part of the ship. With extra space, and extra toilet space and other accommodations for the crew, vessels that were built in compliance with former laws would soon be engaged in carrying the crew instead of passengers and freight. This company has always been solicitous for the welfare of its men, and has always heard any recommendations that the union leaders have had to give. They seem to be perfectly satisfied with the present conditions, for, as a matter of fact, some of our boats have more space than the proposed law provides for; but we do not think it is right or just that the law should force us to build our ships anew and thereby greatly reduce their earning power. It is one thing to plan a ship and build her according to statutory regulations and another to change her to conform to new regulations after she is built. Furthermore, what assurance have we that the changes are to stop here?

Again, the provisions regarding "able-bodied seamen," and who shall be regarded as such, will in a few years make it practically impossible to secure crews. This for the reason that sailing vessels are rapidly disappearing and in the near future will be no more a factor in the merchant marine than they now are in the navy. Not only that, but able-bodied seamen, as a class, are not boatmen. One might be a seaman on deep water for a lifetime and yet not have done any boat service. It is believed that sufficient men capable of handling the boats may be found in the crew of any steam vessel, and that the percentage of such will be as large in all other departments as in the deck department. It should also be remembered that, under the existing law, the entire ship's crew available is required to be exercised at sea in boat drill at very frequent intervals.

In conclusion, we wish to say that we have two or three boys on many of our ships the year around, and our observation is that if American boys are being kept from going to sea it is not because of the conditions that exist upon the ships themselves. We are very apt to lose sight of the fact that being a sailor has no longer the romance and allurements connected with it that it had in the days of the lugger or pirates and treasure islands. After a lad has made about three trips he begins to realize that days at sea are not days of dreaming, and, unless he has the love of the sea in him, the magnetism of the land and the

pleasures of our cities prove too strong an attraction for him.

The seamen's representative may appear before you and claim that the sailor is a badly abused, down-trodden member of the community. But a very little investigation will serve to convince you that the seamen of this day and generation are as well able to take care of their interests as are any other laborers. They are organized into strong and efficient unions, and whatever the representations may be regarding the so-called slavery of a seaman, by reason of the fact that he has been bound in service to the ship for such voyage as he had voluntarily contracted to perform, that the fact is that such binding is an inherent necessity of the business, and that as an offset to that the seaman has advantages that are not enjoyed by any other laborers; that is, he is entitled to his wages for the entire voyage whether he be able to perform any service or not; and is entitled to be cured at the expense of the ship for

any sickness or injury that he may suffer or receive, and this although his own negligence was the sole cause of such sickness or injury. We submit there is nothing approaching slavery in the simple requirement that a sailor who has voluntarily shipped for a given voyage shall remain on the ship until that voyage is completed, the correlative fact being that the ship is bound to the seaman for the same time—that is, her master cannot, except for gross misconduct, discharge a seaman before the end of the voyage.

It should be apparent that a seaman's opportunities for employment will be in direct ratio to the number of ships employed, and therefore that regulations apparently in the interest of seamen which tend to limit the number of ships in operation must necessarily react on the seamen. Of such character we regard the provisions of the bill referred to.

(Signed) FARRELL, KANE & STRATTON.

## RECOMMENDATION OF LOCAL CHAMBER OF COMMERCE FOR AMENDMENT TO COASTWISE SHIPPING LAWS

**T**HROUGH the courtesy of Mr. C. B. Yandell, Secretary of the New Seattle Chamber of Commerce, we are in receipt of the report of this Chamber's Committee on National Affairs for the adoption recommending an amendment to be made by Congress to the Coastwise Shipping Laws, which amendment is of vital importance for the trade between Pacific Coast ports and points in Alaska. The report is given herewith in full.—Ed. note.

Seattle, April, 1912.

To the Board of Trustees, New Seattle Chamber of Commerce.

Gentlemen:

Your Committee on National Affairs has gone carefully through the papers and documents on the subject of the amendment of laws relating to navigation, referred to it by this Chamber. From these documents and other evidence submitted to the Committee, it appears that certain foreign steamship companies doing business on this Coast have found a loophole in our navigation laws, which permits them to engage in the coastwise carrying trade between the ports of Washington, Oregon and California and the ports of Alaska, all within American territory.

This coastwise business of the Pacific Coast is large now and is growing in extent and importance every year.

The method by which the present law is evaded by foreign steamship companies is simple enough and is due to the position of Alaska with reference to the American States on the Pacific.

The Province of British Columbia lies between Alaska and the Pacific Coast States. A foreign steamship company desiring to share in the large and growing trade between the States and Alaska puts on a line of steamers from Seattle, Portland or San Francisco to Victoria or Vancouver. There a close connection is made with a steamship of the same company for a port in Alaska, thus giving practically a continuous service. The business originating in Alaska is handled in the same way. This sort of foreign competition is against public policy and is unfair and unequal. The foreign vessel costs less to build, has a lower wage scale and costs less to operate generally.

In 1894 the navigation laws were amended so as to prevent evasion of this kind in the carrying of freight, but unfortunately that act did not cover the case of the transportation of passengers. To remedy this defect an act was passed in 1898 which provides that:

"No foreign vessel shall transport passengers between ports or places in the United States, either directly or by way of a foreign port, under a penalty of two hundred dollars for each passenger so transported and landed."

The United States Courts, however, have held that this amendment does not reach the case of a foreign steamship company carrying passengers from Seattle to Victoria for example, and there transferring them to another foreign steamship of the same line going to a port in Alaska, however close the connection may be, or in the same way carrying passengers from any port in Alaska to a British Columbia port and thence by transfer to another steamship of the same line to a port in Washington, Oregon or California.

The decision has left the way open for foreign steamship companies to engage in the coastwise passenger trade between the Pacific States and Alaska, and they are taking advantage of it. One foreign company is openly soliciting this class of business and advertising that it will sell through tickets from ports in the Pacific States to Alaska and from a port in Alaska to a port in the States.

It is unnecessary to go into the reasons that have led the people of this country to adopt the policy of excluding foreign ships from our coastwise trade. It is sufficient to say that it has always been the settled policy of the United States and that long experience has proved its wisdom, and that under its sanction and protection a great body of shipping has been built up. To allow a settled national policy like this to be evaded or undermined by foreign shipping companies would be contrary to public interest and against the dignity of the country.

A breach has been found in the law which allows foreign steamship companies to carry on a coastwise business on the Pacific Coast of the United States without let or hindrance in plain violation of the spirit and purpose of our navigation laws.

Your Committee submits that in this situation there is but one thing to do, and that is to close the breach in the law by an appropriate and effective amendment.

Your Committee is of the opinion that the public interest requires that such an amendment should be made as speedily as possible.

Adopted by Board of Trustees April 8, 1912.

THOMAS BURKE, Chairman.  
C. B. YANDELL, Secretary.

## NEW SHIP CONSTRUCTION

THE Hough improved hull construction, of which particular mention was made in the March issue of 1909, of the Pacific Marine Review with our comments, has been adopted by the above company. Mr. Edward S. Hough, Consulting Engineer and Surveyor of the Bureau of Veritas, with offices at 16 California Street, San Francisco, has designed this steamer and prepared the specifications and plans from which the vessel is being built by the Newport News Shipbuilding Company. We are indebted to Mr. Hough for the subjoined information with reference to this construction.

The steamer now being built by the Newport News Shipbuilding Company for the C. A. Smith Lumber Company of Marshfield, Ore., is of the Hough's patented central tank and girder principles, and has nine permanent watertight compartments.

The owner's instructions were to produce a vessel that could be loaded with lumber and discharged entirely by overhead travellers on the wharf.

The C. A. Smith Company have developed a system of handling lumber in packages or units of even dimensions.

They require that the vessel's decks shall be practically open so that the unites or packages of lumber may be landed in the holds without breaking bulk or shifting the package, thereby eliminating considerable stevedoring excepting for the help necessary to let go the crane slings when loading and putting them on when discharging.

The design which Mr. Hough submitted to the C. A. Smith Co. was accepted by them.

The following is a brief specification:

Length over all, 310 ft. 6 in. Length B. P., 295 ft. Beam on deck-molded, 44 ft. 6 in. Depth molded, 21 ft. 6 in.

#### Machinery Aft.

There are eight hatches arranged in pairs, four on each side of the central tank girder.

When loaded to mean draft of 19 feet the load is 2,000,000 feet pine in Smith standard units.

There are 2,000 tons water ballast carried in the hold about amidships, which is used to put the vessel down to a draft of 16 feet aft and 14 feet forward when steaming without cargo against head winds and sea.

It will be conceded that the central girder facilitates carrying such quantity of water, inasmuch as the watertight transverse bulkheads are substantially connected thereto.

Being subdivided into a number of watertight compartments, a bottom tank top is dispensed with and floors are 27 inches deep only, which allows cargo to be stowed low, thereby adding to the vessel's stability.

The engines are one set of three crank triples: Cylinders, 21, 37, 60 inches. Stroke, 42 inches.

The condensor is circular and independent of the main engine framing. The air pump is of the Edwards type run off the H. P. engine. Two bilge pumps are attached to the air pump crosshead.

There are two independent Blake simplex feed pumps, one of which is large enough to feed the boiler.

Four Babcock & Wilcox water-tube boilers are arranged athwartships, with a central force and aft fire room, all water gauges and oil burners visible from the engine room platform.

Three boilers will run the engine. The fourth boiler is an extra boiler.

There is one De Laval turbine driven ballast pump with a capacity of 3,500 gallons per minute.

There are two De Laval turbine driven generators of 10 K. W. each.

A convenient workshop is fitted up in the engine room,

containing a lathe, drill press, and a full line of tools.

This steamer will have a sea speed of 11 knots per hour.

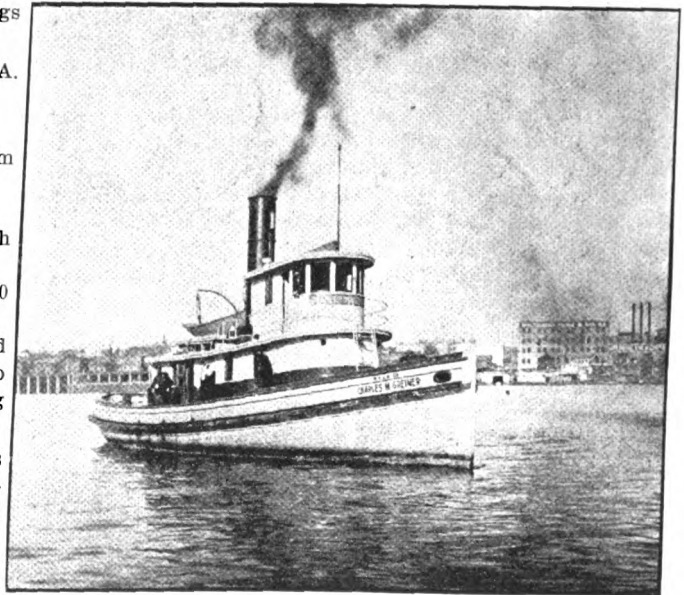
The fuel oil is carried in the central tank, a method which appeals to the owners as having several practical advantages. Any or all tanks are filled from the deck through openings provided in any one of the steel Sampson posts. Much time is saved for the steamer in this manner. The central tank contains fuel oil sufficient for two round trips.

Fresh water is carried under the boiler, under the engines, and in the after peak. The fore peak is built to carry fuel oil if needed.

It will be seen that by confining the liquid fuel to the center of the steamer the stability of the vessel is not impaired.

This is the reverse of present practice of having loose liquid fuel in the vessel's double bottom, which is a serious menace to the lumber carried under a high deck load when rolling in a beam sea.

Mr. C. A. Smith has completely revolutionized methods of handling lumber, and it was to meet the conditions of his system that this steamer was designed.

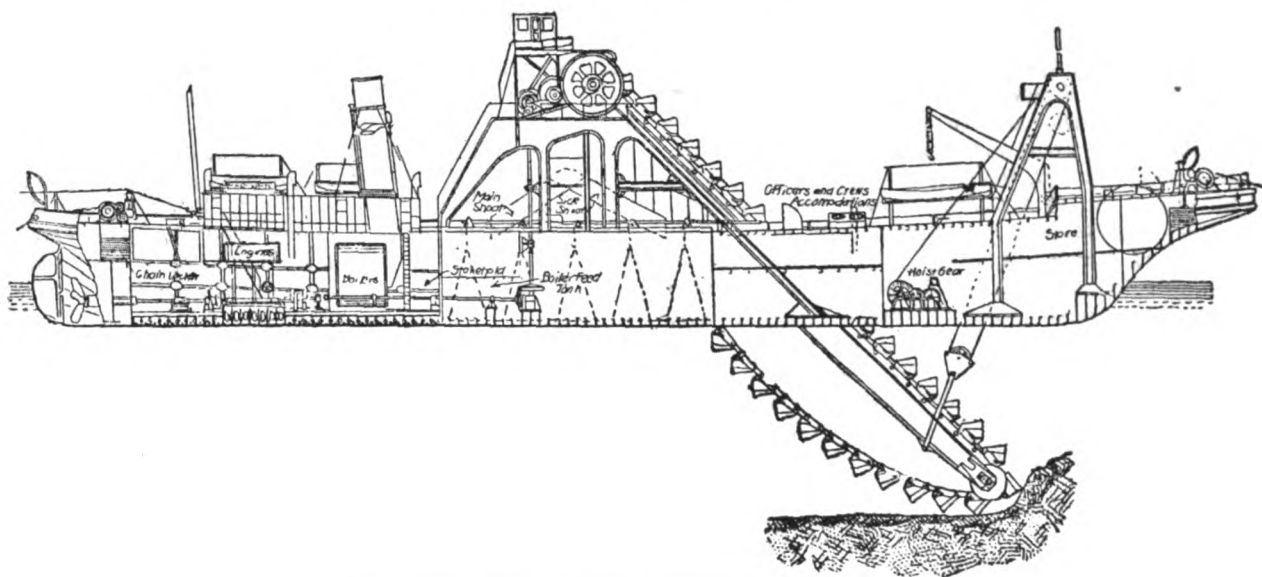


THE PORTLAND TUG & BARGE COMPANY'S NEW TUG "CHAS. M. GREINER"

The above illustration shows the latest addition to this company's fleet. The dimensions of the "Chas. M. Greiner" are 80 ft. over all, 68 ft. keel, 18 ft. beam, with a molded depth of 8 ft. The vessel is built of selected timber, equipped with 18x20 non-condensing engines and has a Scotch marine boiler 8 ft. 6 in. by 10 ft., with two 36 in. furnaces, burning fuel oil. Hammel burners, with a patent Hammel extension front, are installed. The engines turn at about 160 revolutions per minute, giving the vessel exceptional power for her size. The "Chas. M. Greiner" is modern in every way, being especially equipped for harbor and river towing, and is the first boat of her kind in Portland.

H. Stephenson Smith, for many years of the firm of Livingstone, Smith & Co., of San Francisco, has withdrawn from that firm and is now conducting a general brokerage business with offices in the Insurance building, San Francisco.





SEA-GOING, TWIN SCREW, LADDER DREDGE COROZAL

## VOYAGE OF SEA-GOING LADDER DREDGE FROM SCOTLAND

THE dredge "Corozal," which arrived at Balboa on March 27, made its trip from the Clyde in 117 days without serious mishap. Its log shows a total of 12,064 miles, and actual sailing time of 96 days, an average of 125 miles a day. On leaving the Clyde on December 1, the ship struck heavy weather at once, and all through St. George's Channel and in the English Channel was buffeted about by heavy gales and seas. The Canal Record states that to see it alongside the wharf at Balboa one would think the dredge, with its ladder frame standing high above the deck, would be very top heavy and dangerous to handle in heavy seas. This proved not to be the case, and it rode so evenly that at no time were the dishes displaced on the officers' mess table.

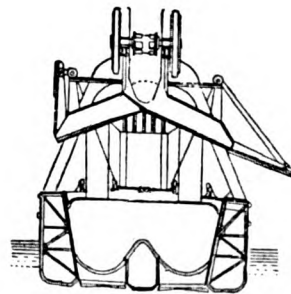
Except for the storm encountered during the first week, the voyage was without incident, all the machinery working satisfactorily and no accidents occurring. The master, Captain William Rodick, who brought the "Corozal" to the Isthmus, has been in the service of the builders for thirty-seven years, and so far as he knows this is the longest voyage ever taken by a dredge with all her superstructure in place ready for digging.

The "Corozal" is a twin-screw hopper dredge built of steel, 268 feet 9 inches over all length, 259 feet between perpendiculars, load water line length, 239 feet; molded breadth, 45 feet; depth, 19 feet; draft when light, 12 feet forward, 14 feet 4 inches aft, 13 feet 2 inches mean; draft when loaded with 1,200 tons of spoil, 14 feet 3 inches forward, 17 feet 4 inches aft, 15 feet 9½ inches mean.

The boiler plant consists of two Scotch marine boilers, 14½ feet in diameter and 10½ feet long, heating surface 2,022 square feet each, grate area 66 square feet each. There are two main engines, which propel the ship or run the dredging gear. They are of the marine, triple expansion type, with cylinders 17, 27 and 43 inches in diameter, stroke 27 inches. With steam supplied at a pressure of 180 pounds per square inch, they develop 928 and 965 horsepower, a total of 1,893 horsepower. The air pumps, steam 10 inch diameter, air 18-inch stroke, 10-inch; circulating pumps, 7-inch bore centrifugal; feed pump, steam, 9½-inch, 7-inch, 18-inch stroke; are supplied from the main boilers, but are not connected with the main engines. There are two condensers with a cooling surface of 1,564 square feet each. The propellers are of cast iron, 9 feet 3 inches in diameter, pitch 12 feet. The dredge is fitted with its own refrigerating and electric lighting plants.

The ladder upon which the continuous chain of buckets revolves is built up of structural steel girders, is 115 feet long and weighs 100 tons. With buckets upon it the total weight is 240 tons. The bull wheels, by means of which the turning power is applied to the chain, weighs 25 tons each, the top dumper 15 tons, the bottom 13 tons. Two sizes of buckets are provided, one of 54 cubic feet for excavation in soft material, and each of these weighs 2 tons 8 hundredweight, and a small 35 cubic feet strong bucket for digging in hard material, each weighing 2 tons 14 hundredweight. The weights given are for buckets alone; when combined with links and pinions each weighs 4 tons. They are constructed of cast steel backs, pressed plates of mild steel for bodies and tempered lips of manganese steel. There are 39 in a chain, and ten spares of each kind are brought over by the "Corozal."

The work for which the dredge is to be used is the digging of about four million cubic yards of hard material, rock, clay and boulders, from the Pacific entrance of the canal between Balboa and Miraflores Locks, excavation that cannot be done by the ladder or dipper dredges now in the service, because of the character of the material and the depth at which it is found. The ladder dredges now in use are old French equipment, and the dipper dredge at the Pacific entrance, although a modern American dredge, cannot do the work required. The "Corozal" has a center well ladder so that it can make its own flotation; that is it can dig into a bank ahead, and when the ladder makes an angle of 45 degrees with the vertical, excavation can be carried on at a depth of 50 feet. At this depth the



SECTION AMIDSHIPS

dredge is required to dig 1,200 cubic yards of soft material in an hour, and on the test referred to below a better showing than this was made. With her hopper containing 1,200 tons of spoil and her bunkers loaded with 100 tons of coal the ship must be able to make ten knots an hour, and this test also was successfully met.

The new dredge is equipped to deposit its dredgings in a hopper capable of holding 27,500 cubic feet, with a hydraulic dumping apparatus, or into barges tied alongside, the sections amidships printed herewith showing the chutes by which the discharge overboard is made. The method of discharging into barges will be especially useful in excavation in Culebra Cut or at any other interior point where the distance from a suitable dumping ground is so great as to make trips by the dredge itself uneconomical.

The only sea-going ladder dredge now in the service is the "Gopher," at the Pacific entrance. Compared with this the "Corozal" has buckets of about five times the capacity of those on the "Gopher," is able to excavate three times as much in an hour, and to dump from its own bins, whereas the "Gopher" discharges only into barges. Including the "Gopher" there are now four rebuilt French ladder dredges in operation in the Pacific entrance, and the new dredge will have a capacity equal to that of all of them.

It was built by William Simons & Co., Ltd., of Renfrew, Scotland. The contract was let on August 13, 1910, after the president had found the bid of an American firm excessive, and, therefore, was authorized to enter into a contract with a foreign builder. In response to the invitation for bids three had been received; that of the Union Iron Works of San Francisco was \$874,146, delivery to be made in fourteen and one-half months; that of Lobnitz & Co., Ltd., of Renfrew, Scotland, was \$449,000, delivery to be made in 365 days, and that of William Simons & Co., Ltd., also of Renfrew, was \$399,340, delivery to be made in 365 days. The difference between the bid of the Union Iron Works and that of the lowest Renfrew firm was \$474,806, an amount considerably greater than the whole bid of William Simons & Co., Ltd. In view of this fact the chairman and chief engineer recommended that the contract be awarded to the lowest bidder, and the President acted upon this advice.

#### MONTHLY SHIPBUILDING RETURNS

The Bureau of Navigation reports that 171 sailing, steam and unriggered vessels of 25,764 gross tons were built in the United States and officially numbered during the month of April, 1912, as follows:

Atlantic and Gulf: 10 wooden sail vessels of 797 gross tons, 33 wooden steam vessels of 1,958 gross tons, 1 steel steam vessel of 680 gross tons, and 3 steel steam vessels of 1,303 gross tons; also 9 wooden unriggered vessels of 1,644 gross tons and 4 steel unriggered vessels of 2,388 gross tons.

Porto Rico: 1 wooden sail vessel of 10 gross tons.

Pacific: 1 wooden sail vessel of 14 gross tons, 51 wooden steam vessels of 3,876 gross tons, 13 wooden unriggered vessels of 717 gross tons and 1 steel steam vessel of 116 gross tons.

Great Lakes: 18 wooden steam vessels of 319 gross tons, 1 unriggered vessel of 293 gross tons, 1 steel sail vessel of 2,005 gross tons and 5 steel steam vessels of 9,306 gross tons.

Western Rivers: 11 wooden steam vessels of 170 gross tons and 8 unriggered vessels of 168 gross tons.

The largest steam vessels included in these figures are: "Calcite," 3,996 gross tons, built at Wyandotte, Mich., owned by the Calcite Transportation Co.; "Bayamon," of 2,551 gross tons, built at Ecorse, Mich., owned by the Ocean Transportation Co., and the "Ylaguez" of same tonnage, built and owned by the same firm.

#### SAN FRANCISCO FIRMS CONSTRUCT NEW STEAMERS

J. D. Davenport & Co., commission and shipping agents, San Francisco, Cal., recently awarded a contract to Kruse & Banks, at Coos Bay, Ore., for the construction of a steamer of the following dimensions: 195 ft. keel, 212 ft. over all, 40 ft. beam and depth of hold 14½ ft. The vessel is heavily timbered throughout (9 keelsons) and extra well fastened; no thin ceiling, the floor being 10 in. and edge bolted from keelsons to clamps; perpendicular rods with turnbuckles between deck beams and stanchions down through keelson. The machinery is now under construction by the United Engineering works. Engines triple expansion, 825 h. p. Steam supplied by Babcock & Wilcox boilers. Fuel oil installation by the Union Iron Works, with their specialty burners. Contract speed, 11 knots. Capacity 900,000 feet of lumber. Dead weight, 1,000 tons.

This vessel was designed by Geo. H. Hitchings, who is in charge of construction. Consulting Engineer, T. L. Tomlinson. This vessel when completed is to ply between San Francisco and Puget Sound ports with freight only. The S. S. "Davenport" is to go into commission about September 15 of this year.

Wilson Bros. & Co., lumber manufacturers of San Francisco, now have the steamer "Columbia" under construction at the yards of Harlan & Hollingsworth, Wilmington, Del. The steamer "Columbia" is of the following dimensions:

Length, 252 ft.; beam, 41 ft.; depth, 20 ft.; lumber capacity, 1,600 M; draft, 17 ft. 6 in.; indicated h. p., 1,300; sea speed (loaded), 11½ knots per hour; first-class passenger accommodation, 51; steerage, 15.

This vessel will be completed and ready to receive cargo about the 5th of July.

#### Continued Activity at Yards of Seattle Construction & Dry Dock Co.

During the past month five whalers were launched at the yards of the Seattle Construction & Drydock Company. Three of these were built for the U. S. Whaling Company and operate under the names of "Star I," "Star II" and "Star III."

"Star I" is 117 feet over all, "Star II" and "Star III" 105 feet over all. The trial trips were successfully carried out for each vessel and all equaled or exceeded the specification requirements for speed of not less than 12 knots per hour. The whalers have gone to the station at Port Armstrong, from which point they will operate.

The Seattle Construction & Drydock Company also launched the whalers "Aberdeen" and "Westport," built for the American Pacific Whaling Company, during the past month. These two whalers are 96 feet long over all and are built along the lines of the whalers "Paterson" and "Moran," which have operated so successfully during the past year. The "Aberdeen" is already in actual service and has captured two monster whales. The "Westport" is ready to turn over to the owners for actual service. The "Aberdeen" and "Westport" will operate from the company's station at Bay City, W. sh., with the "Paterson" and "Moran."

This firm has just secured a contract for the construction of the dredge "Col. P. S. Michie," for Coos Bay, Ore., at \$320,000. The dredge will be 242 feet long over all, 230 feet between perpendiculars, 43 feet beam, 20 feet depth and of the centrifugal well suction type. She will be equipped with Babcock & Wilcox water tube boilers, fitted for burning oil, 500-horsepower triple expansion direct connected engine, and 26-inch centrifugal pumps. She will be twin screw. The sand hoppers on the dredge will be capable of holding approximately 1,000 yards.

### C. P. R.'s S. S. "Princess Patricia"—Remarkable Voyage From Cardiff

A brief description of this steamer was given in a preceding issue of the Pacific Marine Review, but we take pleasure in publishing herewith a detailed account of the voyage of the S. S. "Princess Patricia" from Cardiff to Victoria, B. C., which we have received through the courtesy of Capt. J. W. Troup, manager of the Coast Steamship Service of the C. P. R.

Length between perpendiculars, 270 feet; breadth molded, 32.2 feet; depth molded, 10.5 feet. Turbine engines, 4,000 I. H. P. One double-ended boiler 17.5 feet in diameter and 23 feet long, with eight furnaces and 8 separate combustion chambers.

The "Princess Patricia" made an unusually fast trip from Cardiff to Victoria, arriving at this port at noon the 18th of March, drawing 7 ft. 3 in. aft and 6 ft. 11 in. forward. Sailing from Cardiff at 6:30 a. m. on the 19th of January, with a draft of 8 ft. aft and 8 ft. 4 in. forward, the vessel experienced strong head winds and a heavy sea crossing the Bay of Biscay, and arrived at Las Palmas at 6:55 a. m. on January 24. After having completed coaling, she left the same evening for St. Vincent, where coal was again supplied and where she arrived on January 27. That same evening the vessel left for Bahia, averaging on this voyage practically 15 knots, and where she arrived February 2. When the bunker supply had been replenished she left Bahia at 6 p. m. the same day. On her southbound coasting course she averaged from 16 to 17 knots and arrived at Rio Janeiro on February 4 at 2:30 p. m. After coaling there she sailed at 5:40 p. m. on February 5, arriving at Montevideo at 5:10 p. m. on February 8; coaled the next day and sailed again at 4:45 p. m. on February 9; arrived at Punta Arenas at 8:20 a. m. February 13, took coal and at 3:55 a. m. on February 14 sailed for Coronel, arriving at the latter port at 5:30 p. m., February 18. In this port a delay occurred on account of holidays and coaling was not completed until February 21. Proceeding on her voyage at 9 p. m. on February 21, the S. S. "Princess Patricia" arrived at Callao at 6 a. m. February 26; replenishing coal supply, sailed from Callao at 3:15 p. m. February 28. With good weather up the coast, she arrived at Salina Cruz at 7:20 a. m. March 5. Some delay occurred at Salina Cruz and she was not given coal until March 7; then sailed for San Diego on March 8 at 11:30 a. m. With good weather, but poor coal, she averaged about 14 knots to San Diego, arriving there at 3:30 p. m. March 13. On March 14 she sailed from San Diego on the last lap of her journey at 3:15 p. m., and had moderate weather until she reached the Oregon coast, when she encountered a strong gale, with heavy squalls from the northwest and high sea. This continued until she rounded Cape Flattery, arriving at quarantine at noon on March 18.

The vessel was brought out under the command of Captain Fred W. Pedder, Chief Engineer W. B. Anderson. Taking into consideration her fine lines, light construction and very light draft, together with the fact that her capacity for coal was limited to about 200 tons, the voyage was truly a remarkable one.

Having turbine engines, there was little economy effected by slowing down, and she was therefore kept at a speed of about 14 knots in average weather.

The "Princess Patricia" has Parsons turbines, with triple screws, and one of the remarkable features in connection with this trip as described by the chief engineer, is that in heavy weather repeatedly her propellers would be entirely out of water, and notwithstanding this fact the racing was not noticeable, and in the engine room no one

could detect any difference, whether the screws were in or out of the water.

Another remarkable feature is that the little vessel steered splendidly at all times, notwithstanding the very light draught of water aft.

On arrival at Victoria it was not even necessary to look at the turbines. The only overhauling done was in connection with the auxiliary machinery, and the changing of the water in the boiler.

The total mileage logged was 15,051 miles, total steaming time 43 days 23 hours. The average speed for the voyage was 14.25 knots per hour, and the average consumption per day was 35.6 tons. The total quantity of coal consumed was 1,568 tons.

The "Princess Patricia" has since been fitted with oil tanks and the Dahl system of oil burning has been installed. The vessel is now engaged on the daylight run between Nanaimo and Vancouver.

### U. S. TORPEDO BOAT DESTROYER "HENLEY"

The torpedo boat destroyer "Henley" was launched at the yards of the Fore River Shipbuilding Company on April 3.

The principal dimensions are as follows: Length between perpendiculars, 289 feet; length overall, 293 feet 10½ inches; breadth moulded, 26 feet 4½ inches; trial displacement, 742 tons; trial draft, 8 feet 4 inches. Battery: Five 3-inch guns, 3 45 c-m torpedo tubes on deck, 2 .30 calibre automatic guns.

The contract was signed on November 28, 1910, and calls for delivery on November 28, 1912.

The vessel is flush decked all fore and aft with a top galant forecastle giving a high platform for the forward gun with good height for conning tower and steering stations, while contributing to the sea-going qualities of the ship.

The machinery spaces occupy the amidship portion of the destroyer, the installation consisting of four Fore River-Yarrow water-tube boilers. The vessel is fitted with two 18-stage Curtis reversible marine turbines, 63 inches in diameter and capable of developing 5,500 S. H. P. each, at about 585 revolutions per minute, which will give the vessel a speed of 29½ knots per hour.

For the purpose of bettering the economy of consumption of steam at low speeds there has been fitted at the forward end of each turbine, and connected to it by means of a jaw clutch, a 10½x22x10 inch stroke vertical, compound, reciprocating engine, which at 16 knots is intended to develop 400 I. H. P. at 280 R. P. M., with a steam pressure of 250 lbs. in the high-pressure chest. The steam, after passing through this engine, is put through the turbine and the energy remaining in the steam after passing through the reciprocating engine is extracted down to the last ounce of pressure in the turbine. Shop tests of this unit conducted by a Naval Board last December showed, according to the report of the Board, that the gain in economy at 16 knots amounted to 33 per cent, at 13 knots 62.4 per cent, and at 10 knots 98.96 per cent over the performance of the turbine under similar conditions of steam. The contractors guaranteed that the gain at 16 knots would be 25 per cent. It is expected that the "Henley" will be the most economical torpedo boat destroyer in the U. S. Navy at all speeds from 10 knots up to 31. Subsequent destroyers of a larger displacement are to be fitted with a similar combination of turbine and reciprocating engines.

The "Henley" is of the type of ocean-going destroyer capable of keeping the sea with the battle fleet.

## NEW STEAMER FOR SWAYNE &amp; HOLT

The steamer "Camino" is now under construction at the yards of the Craig Shipbuilding Company at Long Beach, to the order of Messrs. Swayne & Holt, steamship agents, 412 Battery street, San Francisco.

The "Camino" is a double-deck vessel 308 ft. long, 44 ft. beam and 31 ft. molded depth. She has three large hatches, 18x31½, and it is estimated she will have a lumber capacity of 2,500,000 feet. Her lifting capacity on 22.6 will be 5,225 tons of 2,000 lbs. and on 23 feet 5,400 tons. She has three Parker boilers and her main engine will be 22 in. by 36 in. and 62 in. by 40 in. stroke. This machinery should develop about 2,200 h. p., which will give her a speed of about 12 knots loaded. She will have a double bottom from stem to stern, in which she will carry about 4,500 barrels of fuel. The "Camino" will have accommodations aft for 40 first-class passengers and forward for 45 steerage. Her machinery is aft and the bridge and officers quarters midship. The vessel is being built to the full requirements and will be classed in Bureau Veritas.

She will be launched the latter part of this month, and it is expected that she will be delivered to the owners about the end of June.

## THE CANADIAN FISH AND COLD STORAGE COMPANY, LTD.

## Particulars of Steam Trawlers

The above company has awarded contract for three vessels with the option of four to Messrs. Cochrane & Sons, specialists in steam trawlers of Selby-Yorkshire, England.

The value of hull, machinery, tackle and spear gear per vessel is approximately £8,000 (\$40,000). Dimensions are: 118 feet B. P., 22 feet beam, 12.6 molded depth of hold. The vessels are to be equipped with triple expansion engines, to which steam is supplied by Scotch marine boilers. I. H. P., 440; speed, 9 to 10 knots; classification, 100 A1 Lloyd's Register. The trawlers are being built to owner's special specification and in excess of classification requirements. Two vessels are to sail at the latest by the middle of September, 1912, and the others in October, 1912, but progress has been delayed in construction by the national coal strike throughout the United Kingdom. The company expects to commence fishing operations at or near Prince Rupert in 1913.

## NEW ARMY TRANSPORT VESSEL

The construction of the United States army transport "Merritt" has just been finished by the Shanghai (China) Dock & Engineering Company, Ltd., the contract price for which was \$325,000. The new vessel, built of steel, has three boilers of cylindrical return-tube type, constructed for a working pressure of 180 pounds per square inch, and a hydraulic test pressure of 360 pounds. Twin screws are driven by triple-expansion 3-cylinder surface-condensing engines of ample power for a speed of 12½ knots per hour. The engines are "open-front type," with cylinders carried at front by turned steel columns and at back by the condenser and one separate column. Refrigerating chambers with 18,000 cubic feet capacity, three ice machines, electric plants and wireless telegraphy are part of the equipment. There is accommodation for 50 passengers and 350 soldiers.

The Pacific Steam Navigation Co., Ltd., now controlled by the Royal Mail Steam Packet Co., so well known in connection with the South American trades and the West Coast trade, south of Panama, announces a final dividend of 6 per cent for 1911, against 5 per cent for 1910.

## MONTHLY RULINGS OF STEAMBOAT INSPECTION SERVICE

Department of Commerce and Labor.  
Steamboat Inspection Service.

Washington, May 1, 1912.

U. S. Supervising, Local and Assistant Inspectors, Steamboat Inspection Service, and Others Concerned.

Gentlemen:

The following are copies and excerpts from letters written during the month of April, 1912, wherein rulings have been handed down relative to the interpretation of certain of the Revised Statutes, and also sections of the Rules and Regulations, relating to this Service, all of which are submitted for your information and guidance.

Under date of April 3, 1912, File No. 198, the Bureau advised the Falls Hollow Staybolt Company, of Cuyahoga Falls, Ohio, "that screw staybolts that have been rolled hollow with a ¼-inch hole throughout their entire length may be used, as well as screw staybolts that have been drilled at the ends with a ¼-inch hole."

Upon affidavit duly made by the American-LaFrance Fire Engine Company, of Elmira, N. Y., that the Buscoba hand fire extinguisher is identical with the Alert fire extinguisher, which has been approved by the Board of Supervising Inspectors, the only difference being in the name plate, such difference being limited to the brand or trade name and the firm name and address of the Bush-Scott Company, Detroit, Mich., this Bureau, under date of April 3, 1912, file No. 49649, advised the Bush-Scott Company that the Buscoba fire extinguisher may be used on vessels required by law to be provided with fire extinguishers and will be listed in future editions of the Rules and Regulations as an approved fire extinguisher.

Under date of April 15, 1912, file No. 49938, the Bureau advised the Supervising Inspector of the Fifth District with reference to amended paragraph of Section 48, Rule V, which reads as follows:

Any person who received a license prior to the adoption of the rule demanding a visual examination may have such license renewed for daylight navigation only, if no other bar to such renewal appears.

"That the rule demanding visual examination for license as pilot of steam vessels was adopted in the year 1880, and that the rules applying to and including various classes of masters, mates and pilots of steam, motor and sail vessels were amended in various years, and the year of adoption of the rule applying to any class of officers would be the year in which the class was first included in the visual rules.

"Section 10, Rule V, as amended in the year 1899, included masters and mates of ocean or coastwise steamers, pilots of steam vessels and masters and chief mates of sailing vessels. Section 10, Rule V, as amended in 1903, also included masters and mates of steam pleasure yachts. In 1905 the rule (Section 49, Rule V) was amended to include masters, mates and pilots of vessels propelled in whole or in part by steam, gas, fluid, naphtha, also vapor, electric or other like motors, and masters and mates of sail vessels."

During the month of April, 1912, the following named submitted affidavits required by Section 20, Rule II, General Rules and Regulations, relative to valves and fittings:

Manistee Iron Works Company, Manistee, Mich.; The Atlantic Works, East Boston, Mass. Respectfully,

GEO. UHLER,  
Supervising Inspector General.



## CREDIT WHERE CREDIT IS DUE

**I**N relation to the subject under discussion, no expression could possibly be more fittingly quoted than that used in this publication's editorial of the March issue, now in a slightly changed form better adaptable for a case which is not only deserving, but indeed instructive from every viewpoint.

"How practice is kept alive by tradition, derived from the days not wholly passed away, when the modern navigator and marine engineer might and often does refit his vessel in scenes far distant from any help other than his own and without any resources save those which his ready wit can adopt from materials meant for quite different uses and under most trying circumstances," has on the Pacific in late years never been more successfully proven through fine seamanship in connection with the skill of marine engineering than in the experience and action of officers and crew of the British steamship "Hazel Dollar," owned by the Robt. Dollar Steamship Co., Ltd., of which the Robert Dollar Steamship Company of San Francisco are managers.

The S. S. "Hazel Dollar" is a steel, four-masted, single-screw steamer, built in 1905 by Messrs. A. Rodger & Co. of Glasgow, Scotland, of 4,304 tons gross, of the one steel deck and spar deck type, with a carrying capacity of approximately 7,000 tons dead weight, classed at Lloyds \*100 A1, 370 feet long, 50 feet beam, 18.7 depth of hold, and registered in Victoria, B. C. The vessel is equipped with triple-expansion engines 25½x42x70, 48 stroke, for which steam is supplied by three single-ended Scotch marine boilers, carrying 180 pounds per square inch.

Engaged on a voyage from Seattle, destined for Otago, Japan, with a full cargo consisting of flour and lumber, the vessel on March 6 had reached on its great circle track the vicinity of latitude 52 north, longitude 157 west, when the barometer began to fall rapidly.

Speaking of great circle sailing, it may herewith be stated that in this respect the Pacific Ocean has the distinction of being the only ocean in the world on which an unbroken great circle of any consequence may be followed with exceptional advantage, namely, from San Francisco to Yokohama.

On March 5 at midnight the barometer registered 30.26, falling to 29.30 at 6 p. m., March 6, while a gale blew strong from southeast, shifting southerly, when at 10 p. m. a heavy sea boarded the vessel on the port side, which stove in the forward bulkhead of the bridgehouse, floating officers' mess and quarters, smashing in galley door, saddleback lunger hatch, port lifeboat, ventilators and starboard lifeboat shocks. The ship became unmanageable. On March 7 in a gale from the southwest, force 10, it was discovered that the rudder head had broken two feet below the coupling, barometer 29.46 and rising, with high and confused sea running.

In heavy weather if a serious accident happens to main machinery or rudder the ordinary single-screw cargo steamer stands indeed a very poor chance, the vessel immediately falling off into the trough of the sea, rolling frightfully. Whether the cargo shifts or not, a deck load is almost generally lost, and if the hatches are stove in such vessels' names become an addition to the list of missing ships.

In the case of the "Hazel Dollar" it was the 10 ft. 6 in. high lumber deck load which held, no doubt due to its superior lashings, and which eventually prevented further damage and saved the ship from total destruction.

The rigging of a jury rudder commenced on the 6th of March, which was indeed hazardous under existing weather conditions. With the constant use of oil, minimizing as it were the danger of shipping heavy seas, one of the after

cargo derricks (50 feet long) was unshipped and used, in connection with two large iron blades 8 ft. by 4½ ft., ¾ in. thick, into which thirty holes were drilled to fit thirty 1¼ in. diameter stay bolts. Boiler tubes were cut and placed between the steel blades as distant pieces, strengthened by 3x12 ft. timbers bound with steel wires. This substantial piece of work was completed in three days. On the morning of the 10th the jury rudder was shipped over the port side and brought astern. Great credit is due to the third officer, who voluntarily went over the side, supported by a life line, to assist in passing the necessary roping around the jury rudder. The seas washed completely over him, the temperature of the water being 32 degrees. The jury rudder was secured by wire hawsers on each side of the quarter and tightly brought home by winches, to bring the end of the derricks close to the broken rudder stock, which was fastened as well as circumstances permitted. This rudder worked satisfactorily for one day, when continuous bad weather conditions and increasing sea caused the vessel to pitch heavily, preventing its further use, as it was feared that the propeller would be damaged. In consequence thereof it was again taken on board. Under heavy rolling, during a northwest gale on March 13, a drag was constructed out of two 18x9x40 in. timbers, placed 4 in. apart and sufficiently weighed down by 1¼ in. chains and heavy weights. This was launched overboard with port and starboard wires fastened to a bridle and an attempt made to steer the vessel, which on different occasions has often proven successful in a moderate sea. In the "Hazel Dollar" case, with the continuance of heavy weather, it proved a failure and the drag was finally lost. On March 14 officers and crew succeeded after many attempts in securing the broken rudder temporarily. In the meantime winches were reversed to allow the tackles to work, the vessel steering very wild. On March 15 weather permitted the launching of a boat to secure the rudder to better advantage.

So far the ship had been drifting most of the time, preventing the master from shaping any course to return to Puget Sound ports. On March 16 the large steering chains were thoroughly secured around the rudder, one leading to port and one to the starboard side, and with 11x11 timbers placed well forward of the poop, projecting 10 feet out on either side, attached with heavy leading blocks on the end of each, supported by yoke stays from the after mast to take the strain of both. Wire falls were guided on to the No. 3 winches. This remarkable piece of work acted fairly well for a few days, when the wire falls were carried away, breaking the 11x11 in. timbers like a match.

After replacing timbers and wire falls to better advantage the ship was finally and safely brought into Victoria, B. C., without any assistance.

Indeed every credit is due to the master, officers, engineers and every member of the crew. Chinese sailors and firemen, poorly clad, worked night and day in a temperature of 32 degrees and below, proving again vividly what a Chinese crew can accomplish if rightly led by efficient superiors.

The accident to the rudder of the S. S. "Hazel Dollar" is an excellent object lesson in many ways. It proves conclusively the enormous strain on a rudder when hard to port or hard to starboard, which in the writer's opinion should under no circumstances be jammed over tight either way at any time. The rudder surface on the S. S. "Hazel Dollar" is practically 135 square feet. With a strain upon such surface, while under existing conditions, only a small portion of its angle could be put to port or starboard, and well-supported timber 11x11 in. were carried away.

The decision of the commander to turn back can only be highly complimented upon. The vessel when the accident occurred was 1,750 miles from Seattle, with practically 80 per cent of the bad weather on the North Pacific in the month of March against it. Under the crippled condition of the ship the wise course was pursued in steaming back.

Coincident with the "Hazel Dollar's" accident I note in "Fairplay" that the S. S. "Australind," belonging to the Australind Steamship Company, of which Messrs. Trinder-Anderson & Co. are the managers, had identically the same experience while on a voyage from London to Australia with a valuable general cargo on board. The vessel was brought from where the rudder broke, a distance of 1,750 miles, into Cape Town without any assistance. Officers and crew of the "Australind" also worked for three days and nights to fit a jury rudder, and although the weather was very bad eventually the rudder itself was secured by chains, which enabled the ship to proceed at a somewhat higher speed. Captain Hunter, officers, engineers and crew, who so faithfully assisted in the operation, were all remunerated by the underwriters with a sum of money in proportion to their rating and the services rendered. The presentation to Captain Hunter took the form of a gold watch, suitably inscribed and a check for £100, during which Sir John Luscombe eulogized Captain Hunter's action in the presence of a large number of underwriters, representing the companies and Lloyds.

E. F.

#### ACETYLENE LIGHTS ESTABLISHED IN ALASKA

The following named occulting acetylene lights have been established in Alaskan waters:

Hog Rocks, Revillagegedo Channel.  
 Spire Island Reef, Revillagegedo Channel.  
 East Clump, Tongass Narrows.  
 Channel Island, Tongass Narrows.  
 Ship Island, Clarence Strait.  
 Bushy Island, Clarence Strait.  
 Cape Chacon, Dixon Entrance.  
 Dewey Rocks, Cordova Bay.  
 Mellen Rocks, Cordova Bay.  
 Eye-Opener, Sumner Strait.  
 Strait Island, Sumner Strait.  
 Beauclerc Island, Sumner Strait.  
 Stikine Strait, Stikine Strait.  
 Vank Island, Stikine Strait.  
 Cape Strait, Frederick Sound.  
 Turnabout Island, Frederick Sound.  
 Point Gardner, Chatham Strait.  
 Fairway Island, entrance to Peril Strait.  
 Tenakee Inlet, Chatham Strait.  
 Rocky Island, east entrance to Icy Strait.  
 Point Retreat, Saginaw Channel.  
 Midway Island, Stephens Passage.  
 Point Arden, Stephens Passage.  
 Point Young, Stephens Passage.  
 Shelter Island, Favorite Channel.  
 Point Sherman, Lynn Canal.  
 Battery Point, Lynn Canal.  
 Middle Rock, Valdez Narrows.  
 Cape Stephens, Norton Sound.  
 Whale Island, St. Michael Bay.

#### FISHING IN ALASKA TO BE DISCUSSED

Department of Commerce and Labor,  
 Bureau of Fisheries,  
 Washington.

To All Whom It May Concern:

Whereas, the Secretary of Commerce and Labor has been requested to prohibit all commercial fishing in all streams

tributary to Cook Inlet, Alaska; Eyak River, near Prince William Sound, Alaska; Anan or Humpback Creek on Cleveland Peninsula, Alaska, and Naha Stream on Revillagegedo Island, Alaska, including the lakes in their catchment basins frequented by salmon, and an area or zone within 500 yards of the mouth of each of the above streams, notice is hereby given under the provision of section 6 of the act of Congress approved June 26, 1906, entitled "An act for the protection and regulation of the fisheries of Alaska," a hearing to determine the advisability of setting aside the above named waters as preserves for spawning grounds and limiting or prohibiting all commercial fishing therein, will be held in the Hotel Washington Annex, at Seattle, Washington, on October 18, 1912, at 10 o'clock a. m., at which time and place all persons interested will be heard.

GEO. M. BOWERS, Commissioner.

Approved: Charles Nagel, Secretary.

Messrs. Buxbaum & Cooley, electrical engineers located at 68 Columbia street, Seattle, have recently satisfactorily completed a thorough installation of electrical equipment on the steamers "Alki" and "Admiral Sampson." The contract for furnishing electrical fittings for the new Melbourne Theatre, Seattle, has also been successfully fulfilled. Buxbaum & Cooley are agents for the B. F. Sturtevant Company, whose general works are located at Hyde Park, Mass., and whose engines and generating sets are compact and durable, and for which an efficiency of 90 per cent is claimed. A carload of machinery from the B. F. Sturtevant Company is now on the road consigned to this firm.

#### BLUE FUNNEL LINER S. S. "TALTHYBIUS"

This fine addition to the fleet of the Alfred Holt's Blue Funnel Line, of which Messrs. Dodwell & Co., Ltd., are Pacific Coast agents, has recently left Seattle for the Orient, on the return trip of her maiden voyage. The S. S. "Talthybius" is practically a duplicate of the S. S. "Protesilaus" of the same fleet, with the exception that the new vessel is 20 feet longer and carries approximately 1,500 tons more cargo. Her gross registered tonnage is 10,224 tons, net 6,525, beam 60, length over all 520, depth of hold 43, total dead-weight capacity 14,250 tons, drawing when loaded 32 feet. The vessel has accommodations for eight first-class passengers and 1,000 steerage passengers.

#### ESTABLISHMENT OF SUBMARINE BELL BUOY OFF CAPE ST. ELIAS, ALASKA.

The following information to marine interests in general is given by Lighthouse Inspector Roy L. Hankinson of the 16th District, Ketchikan, Alaska:

"At a date to be fixed later, of which due notice will be given, a submarine bell buoy will be established off Cape St. Elias, Alaska, and maintained for some time for experimental purposes by the Lighthouse Inspector Ketchikan, Alaska, by direction of the Commissioner of Lighthouses, Washington, D. C.

"In order that the test of this bouy may be as effective as possible, all ship owners operating vessels in Southwestern Alaskan waters are requested to equip their ships with the proper receiving apparatus.

"If this buoy is found to be of sufficient aid to navigation it will doubtless be permanently established, and others installed at needed points, as funds for the work become available."

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## LOST—"TITANIC."

**P**ERILS and mysteries of the deep, against which no human skill or vigilance can provide, have in the maritime history of nations never before immersed the entire world more emotionally and deeply into sorrow than the terrible catastrophe which befell the latest, largest and perfected product of the shipbuilding enterprise, "Titanic," the skill of the first maritime nation of the world.

The contemplation of the calamity, with its appalling loss of life, has caused open and sincere grief, trying indeed to the stoutest heart. To do justice to and express what one feels, when confronted with such terrible events of providence, baffling all foresight and bewildering all imagination, makes one truly realize the inadequacy of words to fittingly express admiration of the chivalry and heroism displayed by all on board of this mammoth vessel. The general public is fully convinced that the best traditions of the sea were nobly observed to the last. Sacrifices were willingly offered and the first chance of safety given to those who were least able to help themselves. The heartfelt sympathy of an entire world was bestowed to those who were suddenly bereaved of their nearest and dearest.

Since most of those in charge of the "Titanic" on and below the deck are sharing the watery grave of its thousand passengers, we will never know the exact conditions under which this giant of the ocean was injured and to what extent its well constructed hull was damaged, causing its total disappearance after a period of four hours. We can only surmise. No indefinitely extended investigation will ever bring forth the important facts necessary to unveil the haze which so much conceals this unparalleled loss. Seemingly, passengers did not at the time realize the imminent danger confronting those on board this huge floating palace, after the shock, more keenly felt forward and which was accompanied by piercing grating sounds, caused by the sudden contact with ice. Its commander and bridge officers perhaps knew to some extent, but the seriousness of the situation must have only become apparent to all with the ship's first gradual, then more rapid, listing to starboard and its inclination to sink forward.

Few of us ashore, including men in possession of profound nautical knowledge, and even those who have followed the sea successfully in command of ships, can under normal conditions fully realize the enormous responsibility thrust upon the shoulders of the commanders of these ocean leviathans.

Such overwhelming trust when revealed in a lightning crisis, almost crushing in its magnitude to the one so confronted, claims quick and precise action on which depends the "to be" or "not to be" of thousands of human lives, including that of the commander himself. In any danger crisis, imperative, instant decision of bridge orders becomes final and from which the human mind and power is deprived of all further deviation, as it often has priorly been proven, and in this instance unfortunately and deplorably so, despite the fact that the best and most efficient officers were in charge of this the largest and best equipped vessel that ever floated. Grim death has sealed the lips of those in charge of the bridge, and grim death has also sealed the lips of those in charge of the gigantic engines. Of the latter staff, we have heard nothing, of which if only one senior member on watch had been saved we could have been enlightened convincingly in regard to bridge orders given by telegraph and of the terrible injury to the vessel's hull under waterline. The excellence of discipline throughout was combined with an inspiration of courage almost superhuman and unequalled in sea tragedies of magnitude heretofore experienced and the engine room staff is indeed deserving of high praise. "Lower the life boats," "Women and children first," were the orders on deck, which all, in every rank to the humblest apprentice and bell boy, respected, gallantly awaiting the final plunge.

The order in the engine room demanded every engineer to his respective station in the bowels of the vessel, rushing perhaps to instant death ere they reached their destination, in vain attempt to save their proud but already doomed charge, without even obtaining a glimpse of some floating wreckage in the icy waters. They stuck to their respective posts. The ship went down with the lights burning, while the strains of "Nearer My God to Thee," played by the ship's band, could be heard. What a tribute!

Sic gloria transit mundi.

General perception of the awful distress in connection with the lingering uncertainty in this disaster caused a public epidemic of hysteria, flamed by prejudiced news items, which developed into unjust persecution of the steamship management. We deplore the unmerited abuse heaped upon Mr. Ismay, who should never have been confronted with the brunt of such false assertions in regards to saving his own life and the inefficient equipment of life saving appliances, which in all countries rests with government rulings, and not with the steamship companies concerned.

Whatever blame further investigations may or may not attach to Captain Smith, although the chief officer was in charge of the bridge at the time of the accident, the captain, after all, did not commit himself more than any other commander in charge of a trans-Atlantic liner would have under similar weather conditions, a fine, clear and calm night, knowing, as his years' of experience in this trade had taught him, of the shifting positions of the ice sighted by other vessels, on either east or westbound routes, and the writer is fully convinced that the "Titanic" was nothing north of the westbound track, complying with the stringent rulings of the White Star Line in this respect, which rulings are jointly adhered to by other trans-Atlantic steamship companies. Misfortune overcame in this instance the Titanic's master.

Safety in ocean travel is and will remain at all times to come precarious, as mankind can but remain powerless before the forces of untamed nature. Let us bear in mind what is permitted to go on every day ashore, where the prevention of disasters is not pending upon the action and foresight of one man.

The Titanic catastrophe, like every disaster of magnitude, involving great loss of life, will serve to overcome

many defects and to furnish more and necessary remedies which imperatively are the laws of all developments. In its magnitude, this disaster has attracted attention to the inadequacy in the maritime law of every maritime nation of the world. We see in this dearly bought lesson not only an early revision of antiquated maritime law in each and every country so concerned, but a maritime law called into existence and universally adopted, an International Maritime Law of the World, similar to the International Rules of the Road.

Great Britain is now confronted with the Titanic probe and the importance of its results on the laws governing the mercantile marine promises to overshadow all previous tribunals of similar character. Germany has taken preliminary steps towards an international conference on its Emperor's initiative by having called a meeting on May 6th at the Department of the Interior, under the presidency of the Secretary of State, which meeting is to be attended by members of all prominent shipping companies of the Empire.

In our own country maritime law in its crying need for revision has never before been brought more vividly to the attention of all legislative bodies and never more strongly before the public in general, and only the best results must and will be obtained in the near future.

Our own weakness in the Titanic disaster lies in a reciprocal agreement with other nations permitting them to carry United States citizens from and to our ports in vessels inadequately equipped with life saving appliances, which has been in effect for the past five or six years with Great Britain, Germany and France, and for the last two or three years with Japan, all Scandinavian countries and the Netherlands, and while foreign passenger ships are subject to our steamboat inspection service, this service is only permitted to see that the rules of the respective foreign governments are lived up to while in American ports.

In conclusion, the Pacific Marine Review cannot enthuse in the prospect for some time past under consideration in Canada for the establishment of a fast express steamship service, twenty-four knots, from and to Canadian eastern ports on the North Atlantic. The presence of detached ice bergs in large quantities, and their uncertain radius, differing each year, would on these necessarily northern tracks become so much more dangerous than the route on the southern track has proven, that the object lesson in the "Titanic's" disaster so dearly bought would stand for naught. These facts should make an express service of such speed from northern ports absolutely prohibitive, notwithstanding the stringent rules which will be enforced and the extensive compulsory life saving equipment of the future.

E. F.

#### "TITANIC" DISASTER

Pacific Marine Review, Seattle, Wash.

Gentlemen: As proprietor of this journal I wish to add my tribute to the magnificent conduct of the entire ship's company and crew, which has vindicated the best traditions of the sea, and in which all nationalities share equally in this appalling and unparelled disaster.

Owing to the magnitude and completeness of this disaster and the pitiful paucity of its survivors, which left no place for the master, senior navigating officers and members of the engine room who bravely and calmly awaited death, after they had done all that was possible to save their passengers and subordinates, the circumstances under which the "Titanic" struck the iceberg, filled and foundered, must always be a subject of conjecture and conflict, and therefore no useful definite object lessons can be learned. at

least from a structural standpoint, beyond dispelling the popular, though never professionally accepted, belief in "unsinkable ships."

On the other hand the undeniable insufficiency of life boats and other life-saving equipment, which resulted in such a heavy loss of life, abundantly confirms the campaign which the daily press, the shipping press, including the Pacific Marine Review, has waged for years, urging the necessity of revising obsolete laws and of bringing same nationally and internationally to the standard and efficiency demanded by modern steamship transportation, progress and reform, the realization of which seems to demand the sacrifice of disasters such as those of the "Titanic" and "General Slocum."

It is unnecessary to dilate upon the inadequacy and misapplication of British Board of Trade rules, which we have always considered a much over-rated departmental standard, which assigns life boat capacity per tonnage, and which in times of 45,000-ton vessels records a maximum of 10,000 tons, instead of in proportion to licensed capacity.

Now that life-saving equipment standards of all nations have been brought so prominently into international observation, it is some consolation to note that those of the United States are relatively higher than those of other great maritime nations, though, as the Pacific Marine Review has for years contended, the steamboat inspection service of the United States requires complete reorganization and reconstruction at law, and, particularly, division into properly constituted and competent details, instead of, as at present, being overwhelmed by a multiplicity of duties, requiring widely divergent qualifications, which it is impossible for its present constituents to perform.

I purposely avoid criticisms of structural considerations, such as stability, strength, etc., of these large vessels, into which I am not competent to enter, leaving such to naval constructors, though unfortunately, as stated at the beginning of this communication, they will have no records on which to base instructive recommendations, but I venture to hope that the "Titanic" disaster will destroy the present practice of piling deck-erection upon deck-erection, and super-structure upon super-structure, which I have always condemned, not from considerations of structural stability and safety, but from the direct and indirect difficulties these add to the practical working of a ship.

In the published descriptions of the "S. S. Titanic" and ships of similar construction, we are overwhelmed with reports of their towering super-structures, large special cabins for millionaires, and even special promenade decks for the exclusive rich and socially select, and also by descriptions of extraordinary internal fittings and unnecessary accessories of wealth and luxury, but which demand space and weight; all begotten of the dangerous attempt to erect hotels of luxury at sea equal to those on land, but upon foundations and in circumstances utterly different.

The great problem of the naval architect and designer is to save space and to reduce weight and displacement, which involves increased expense and reduced speed, and as long as the law permits, and the steamship owner, catering to the extravagant demands of a small but paying section of the travelling public, requires him to meet these extravagancies, so long will the naval architect be forced to reduce space and weights in every other possible direction, which may take the form of insufficient strength, and which too often includes the reduction to a minimum of life-saving equipment, as well as its placing where it is most difficult to use—in fact, under conditions usually prevailing at a disaster at sea, utterly unusable.

In many of these great monster liners, with their towering super-structures, so that the rich may be sufficiently



accommodated and divided from the poor, the boat deck is from 50 to 70 feet above the water, which simply means that it is almost impossible to launch a boat (especially in the eastern trades with Asiatic crews) without it smashing on the ship's side, unless the vessel is in a comparatively calm sea, and upon an even keel—very rare positions in a stranding collision or foundering, though in these respects the "Titanic" was favorably situated.

If less space and weight in the "Titanic" had been assigned to super-structure and to extraordinary accommodation and luxury, and more space and weight had been assigned to lifeboats and other life-saving equipment, including, possibly, several motor-propelled or steam launches, with an independent steam unit above deck, in case of failure of main steam plant and/or dynamos below, and ship's derricks to put them overboard, no part of which equipment might look as pleasing to the eye or as gratifying to the taste of frequenters of Louis Quatorze salons and pagodas, two continents would not now mourn the loss of 1,600 lives.

Lastly, I ask that the Pacific Marine Review, while fully vindicating its motto, "Be just and fear not," will proceed cautiously until all facts and circumstances, such as are available, have been carefully measured and considered by competent authorities both in the United States and in the United Kingdom, and will not identify itself with any ill-considered and impulsive attack upon the great steamship lines which has certainly arisen in the first shock of public grief and in exaggerated zeal for public safety.

The public can best assist in contributing to its safety by destroying its present insensate appetite for speed, extravagance and luxury, which produces these great steamers, with their towering super-structures and speed records, which demand dangerous speeds in dangerous waters, the telegraph sometimes standing at half speed but the engines turning over at full speed, master, chief engineer and owners all equally driven by this madness of the age in public competition. Yours faithfully,

H. B. JAYNE.

London, April 20, 1912.

#### THE LOSS OF THE "TITANIC."

To the Editor Pacific Marine Review:

THE disaster to the "Titanic," with its appalling loss of life, has been covered and commented on so much by the daily press that it seems unnecessary to go into details here, but there are some things in connection with this awful calamity which should be hammered at until some intelligent and adequate remedial legislation has been adopted. It is to be hoped that in the hysteria of the moment no hasty and ill advised action will be taken. Following this disaster travel by sea will be much safer for some time to come, as navigating officers and owners will exercise greater caution and provide more safeguards than heretofore. Therefore there is time to consider the whole matter calmly and to arrive at the best solution not only for the traveling public, but for all concerned.

In the first place, as to the Senate investigating committee, it would seem as if in a matter of this kind such a committee should be composed of men familiar with the subject matter under investigation and that the chairman should have more than a superficial knowledge of conditions. Senator Smith is undoubtedly a very able man in his line, but that line is certainly not in connection with ships and shipping. I quote verbatim from the testimony as given by the Associated Press dispatches:

"Were there any water-tight compartments on that ship?" the Senator asked.

"Certainly; forty or fifty."

"Were they known to passengers and crew?"

"Must have been—by the plans distributed about the ship."

"Did you know whether any of the crew or passengers took to the water-tight compartments as a last resort?"

"It is quite impossible for me to say."

"Is it at all likely?"

"I think very unlikely."

"As for yourself, you prefer to take to the open sea?"

"Undoubtedly."

"Are the water-tight compartments intended as a refuge for passengers?"

"Oh, dear, no, sir—not at any time."

"Suppose this ship had sunk in less depth of water, would the watertight compartments have been any refuge?"

"No, sir—never intended for that purpose. They were designed to prevent the ship from sinking."

Such questions as these show such ignorance on the part of the chairman of the committee that they tend to make the whole investigation farcical and ridicule not only the chairman himself, but the whole committee and the entire country. For his own standing it would seem as if the Senator would have informed himself as to the construction of a ship before holding himself up in such a manner. What benefit can be derived from an investigation carried on by a man who shows such ignorance of the matter? One does not go to a lawyer to be treated for illness nor to a doctor to get legal advice; then why should a matter of this kind be placed in the hands of a man whose only knowledge of steamships is probably of the saloon and decks that he may have seen when making a trip.

The question of life boats has caused a wave of hysteria to pass over the maritime world, and while remedial legislation is necessary in this particular, yet the matter should be considered calmly and a solution arrived at in sober judgment.

It must be remembered that the conditions surrounding the loss of the steamer and the lives were peculiar and might never again be duplicated. The steamer remained afloat several hours after striking, remained almost upright, and the sea was smooth—all of which allowed the lowering of the lifeboats without difficulty and would have resulted in the saving of every person on board had there been enough boats. But this is very unusual, for in the large majority of shipwrecks the vessel will take a list, thus making the use of lifeboats on the higher side impossible. Or there will be a heavy sea, making the lowering of the lifeboats extremely difficult and resulting in the smashing of some of them before they are safely away from the side of the ship. In such cases just sufficient lifeboat room to take care of all of the persons on board will not be enough and it would be necessary to have at least double this number. There is no doubt but that there were sufficient life belts on board for all, but here again the icy water in which the loss occurred rendered these useless for the saving of life. In warmer latitudes in a loss by collision or by running ashore the use of the life belts might be more effective than the use of the life boats.

Many suggestions have been made as to what should be done, one, which to my knowledge has received commendation, being that each passenger on going on board shall have a seat in a life boat assigned to him. On the passage the passenger ascertains the locality of the boat to which he has been assigned, so that in case of accident he will at once repair there and take his reserved seat. This is all very well if the ship remains upright, but if she should take a list, say to port, thus rendering the boats on the starboard side useless, would the men assigned to the port boats take their positions and allow the women and children assigned to the starboard boats to remain on board and take their chances?

I repeat that this whole matter should receive the most careful attention of men familiar with the subject and of the dangers that must be met, so that legislation may be sane and make for greater safety. Absolute safety there can never be!

The underlying cause of the loss will never be known. Whether Captain Smith had received positive instructions to "break the record" at all hazards, whether or not it was due to an error of judgment in keeping so far north, or whether it was due to a desire on his part for personal glory by breaking the record, none can or will tell, but after the accident Captain Smith and all of the men under him showed themselves to be brave and true men, and for this they are entitled to all honor.

R. B. H.

#### REVIEW OF COAL EXPORT MARKET

Hereafter the Pacific Marine Review will publish regularly the circulars issued by James & Alexander Brown, colliery owners, steam tug proprietors, ship and insurance brokers, which circulars are issued from their Newcastle, N. S. W., office.

Pacific Marine Review, Seattle, Wash.—

Dear Sirs: The total quantity of coal exported foreign since our last report, January 1, 1912, is 187,994 tons in 50 vessels. Its distribution was as follows: Nine for Valparaiso, 50,580 tons; seven for Java ports, 43,850 tons; five for Antofagasta, 13,931 tons; three for Singapore, 9,863 tons; two for Manila, 9,763 tons; five for San Francisco, 9,719 tons; two for Tal Tal, 6,941 tons; two for Coquimbo, 5,470 tons; one for Honolulu, 5,000 tons; one for Guaymas, 4,748 tons; two for Callao, 4,478 tons; two for Caleta Buena, 4,476 tons; two for Caldera, 4,203 tons; two for Salaverry, 4,161 tons; one for Bombay, 3,200 tons; one for Pisagua, 2,183 tons; one for Iquique, 2,108 tons; one for Mauritius, 1,753 tons; one for Arica, 1,567 tons.

There are 15 vessels in port for loading, aggregating 30,523 tons register.

Estimated tonnage to arrive during this month is 80,000 tons register, to load principally for West Coast of South America and Eastern ports.

We may state for the information of shipowners and others that a registration fee of 2s 6d per month is charged by the telegraph department here on all cables received, and the amount must be paid before the message is delivered.

We strongly recommend owners not to contract for trimming, as most charter parties stipulate that charterers' stevedores shall be employed.

Rates of freight—We quote approximate:

Java, 7/9; Manila, 8/6; Singapore (Steam), 9/-; Mauritius, 17/-; San Francisco, 17/-; San Diego, 15/6; Honolulu (steam), 11/6; Valparaiso f. o., 19/-; Mazatlan, 16/-; Guayaquil, 20/-; Acapulco, 16/6; Panama, 16/6; Guaymas, 16/6; Bombay (steam), 10/-.

Intercolonial—Bluff, 9/-; Timaru, 9/-; Auckland, 8/-; Napier, 10/-; Lyttelton, 8/6.

Coal prices are—Best screened, 11/-; small, 7/-; coke, 20/- per ton. All prices f. o. b. at Newcastle.

Our London house is always open for coal chartering from Newcastle, New South Wales, to all ports, at current rates; for nitrate or grain from ports on the West Coast of South America to United Kingdom, continent or United States; for grain from South Australia to United Kingdom, Rio or Cape Town; for lumber, from Burrard's Inlet, Puget Sound, to usual Australian ports, or to United Kingdom or continent, orders on signing bills of lading or at port of call, also sugar from Java to Australian ports.

Yours faithfully,

JAMES & ALEXANDER BROWN.

#### REVIEW OF FREIGHT MARKET BY PAGE BROS. OF SAN FRANCISCO

San Francisco, May 4, 1912.

Editor of the Pacific Marine Review, Seattle, Wash.—

Dear Sir: Since we sent you our last review of the freight market, November, 1911, there has been a most remarkable advance in rates the world over. Moreover, it promises to endure, at all events during the year 1912, and it must be due principally to the enormous increase of the world's trade and in a less degree to the stoppage in the building of sailing vessels, the inactivity in the construction of steamers, the heavy losses of vessels and also the breaking up of many of the older tramp steamers.

It will be interesting to compare the freights ruling last November with those of today, and we will commence with sailing vessels.

Wheat for Cork, f. o. U. K. Cont., November 28s to 28s 9d per ton. Today for same period, 31s 3d to 32s 6d from Puget or Portland for next November loading.

Barley from San Francisco to United Kingdom, 25s. Today 30s per ton for July, August, September.

Lumber from the North to Valparaiso for orders, 50s to 52s 6d per M feet; now firm at 57s 6d to 58s 9d. Lumber to Sydney, 40s, now 47s 6d to 50s; to Brisbane, 42s 6d; today, 50s to 52s 6d. New Zealand 47s 6d, now 57s 6d to 60s. Lumber direct to Africa then 65s, today 77s 6d to 80s; to United Kingdom 65s, now 77s 6d to 80s; to Buenos Ayres, 67s 6d; today probably 75s would be paid were there vessels available.

The only freight on this Coast which barely shows an advance is the lumber trade from the Columbia river, Grays Harbor and Puget Sound to this port and the south, which last November was dull at \$4.25 to \$4.75, and today, though firm and active, is about \$4.75 to \$5.25 respectively, not at all in proportion to the advance in foreign directions. It is in steamers, however, that we note the greatest change. When we last wrote you, steamers were considered to be getting good charters when they fixed at 4s sterling on the dead weight per ton per month to Australia just for the trip down, and this was the case until January, when the list of disengaged steamers had grown suddenly "beautifully less" and the more astute of our shippers jumped into the market, paying 5s and 5s 6d on dead weight to fill their immediate wants. Since then they have worked up to 7s with one setback only to 6s 3d, and can now be quoted as strong at 7s, practically 3s advance in four months, which is on a 7,000-ton steamer, say \$5,000 per month in the owner's pockets. To the Orient even greater strides were made, owing to the enormous shipments of cotton. Last November 5s on dead weight was being paid, and this rate prevailed up to the end of January, when the "Harpagus" and "Robert Dollar" jumped the rate to 7s on dead weight, and in February of this year the "Oceano" of Andrew Weir's fleet had the distinction of fixing at 9s per ton on her dead weight, the highest rate we have known since we have been chartering. The rate eased off since to 6s and is now about 6s 6d to 7s.

We look for steamer freight rates to be maintained owing to the decreasing list of available or disengaged steamers headed this way and the demand which exists for tonnage. The coming crop of wheat in your state, Oregon and Idaho will require much tonnage, and the high rates already being indicated for October, November and December will certainly induce some of the steamer tonnage to take up grain charters. We had intended mentioning some of the extraordinary charters which have been made in the Atlantic and also from Australia to West Coast of South America, but realize that even now we are transgressing on your space. Yours sincerely,

PAGE BROTHERS.

## TRANSPACIFIC BERTH

While the volume of traffic moving from the Pacific Coast to the Orient is considerable, and all regular line steamers are being loaded to their capacities, shipments are, for the most part, being made under old contracts and new business in flour is difficult to arrange, on account of the present high price of wheat. The cotton movement is practically over, but there is a fair inquiry for lumber.

On opening Government bids for annual transportation of supplies to the Philippines, at the office of the Deputy Quartermaster, on May 1, it was found that Messrs. Frank Waterhouse & Co., Inc., and Messrs. Dodwell & Co. were the only bidders. The rates quoted were:

Forage, \$5.00 per 40 c. f.

Coal, \$6.00 per 2,240 lbs.

Lumber, \$10.00 per 1,000 ft. b. m.

Bids are now under consideration at Washington, D. C.

## Freights and Fixtures

May 8, 1912.

Pacific Marine Review, Seattle, Wash. Dear Sirs: Since last writing you, the freight market has not undergone any material change. Rates remain very firm, with the demand greater than the supply of tonnage.

**Steamers:** Several steamers have been chartered at from 6s 6d to 7s for the trip down to Australia. Current rates are nominally the same. There are some inquiries for steamers for grain of the new crop for Europe. Shippers are talking of 35s, and owners' views seem to be about 40s on the basis of wheat from Portland or Puget.

**Sailers:** Rates for sail tonnage remain firm, with, if anything, an upward tendency, current rates for Chile being about 60s for orders, less 2s 6d direct, while probably about 52 s 6d would be paid for Sydney.

**Fixtures—Steamers—**

S. S. "Strathay," time charter, delivery Pacific, redelivery Australia .....	7s
S. S. "Strathleven," time charter, delivery Pacific, redelivery Australia .....	6s 6d
S. S. "Crown of Arragon," time charter, delivery Pacific, redelivery Australia .....	6s 6d
S. S. "Inveric," time charter, delivery Pacific, redelivery Australia .....	6s 6d
S. S. "Ikala," time charter, delivery and redelivery S. F., about 6 mos. ....	5s 6d

**Sailers—**

"Edouard Detaille," Portland, Europe, 35s; wheat, 36s 3d, barley, Sept.-Oct.

Yours very truly,

HIND, ROLPH & CO.

**MARKET REPORT—CANNED GOODS**

By Messrs. Anderson & Colman, Ltd., London, E. C., Dated April 27th, 1912

**Salmon—Alaska—**There is better enquiry for Alaska Red 1-lb. talls, but buyers are able to secure their requirements on slightly better terms, and values are now from 29/3d to 29/6d ex wharf London or store Liverpool.

**Alaska Medium Reds—**No change. There are sellers at 25/ labelled and 26/ unlabelled, but buyers are difficult to find.

**Alaska and Puget Pinks—**There is very little market business doing, but the reports from the country are slightly more encouraging. A determined second-hand seller of the finest goods had to accept 16/ in order to clear his stock, which was not large. Nominal values today are from 17/6d to 18/ for the best. Inferior parcels are not being pressed for sale.

**British Columbia Sockeye fish** is in better demand from the country. Value of ½-flats is 47/ and 1-lb. flats are quoted at 38/ both in London and Liverpool.

California fruits are in good demand at full rates.

**ANNUAL REPORT OF CUNARD STEAMSHIP COMPANY**

The annual report of the Cunard Steamship Company for 1911 shows that the profits for the year, including £60,332 brought forward, amounted to £898,359. After debiting income tax and debenture interest, and reserving £455,298 for depreciation of ships and wharf properties there remained at the credit of profit and loss account £330,287. Of this £47,016 was transferred to the insurance account and £100,000 to reserve.

The directors recommend dividends of 5 per cent on the preference stock and 7½ per cent on the ordinary shares, including the government share, leaving £87,269 to be carried forward. The balance at the credit of insurance account is £59,191. The reserve fund has been increased to £800,000.

The company's first-class passenger traffic during 1911 remained at about the satisfactory level of 1910, while in the second cabin trade there was an increase of upwards of 2,000 passengers. The third-class business was very disappointing, conditions in America not being favorable to emigration from Europe. Freights generally have been satisfactory. The operation of a larger fleet has naturally led to a rise in working expenses, but some part of the increase is due to higher labor costs and to special expenditure in connection with the labor disturbances in Liverpool last summer.

**CANADIAN WESTERN LUMBER CO., LTD., VANCOUVER, B. C.**

We note with satisfaction the successful annual report of this Company, controlled by interests subsidiary to the Canadian Northern Railway Company, and owning the Fraser River Mills, which largely participate in the export lumber trade, as we have always held this company in good esteem, and resting on sound foundations, in contradistinction to many Canadian Pacific Coast lumber companies which have been floated during the past two years on the London market, several of which have collapsed to the injury of bona-fide flotations.

H. B. J.

The profit for the year amounted to \$877,911; from which has been taken Debenture interest, \$361,340; interest on loans on capital account, \$74,282; debenture stock sinking fund provision, \$175,299; reserve for depreciation, \$80,133; and special annual reserve for accounts receivable, \$3,500; leaving to be carried forward, \$189,356. The sum of \$80,133 has been set aside for depreciation on plant. The sum of \$3,500 has been transferred as a special reserve on accounts receivable, and to the balance of \$183,356 has been added the undivided profits of \$11,122 brought forward last year, making the total undivided profits \$194,478. The profits for the year, viz., \$877,911, based on the lumber sales of 114,686,179 feet, is at the rate of \$7.62 per thousand feet board measure. This is 12 cents per thousand feet in excess of the profit of \$7.50 estimated.

**ROYAL MAIL STEAM PACKET ANNUAL REPORT**

The directors recommend out of the profits for the year ended December 31, 1911, the payment of the usual dividend on the preference stock, and, after transferring £40,000 to the reserve fund and £40,000 to the insurance fund, a dividend of 5 per cent, less income tax upon ordinary stock.

The market was disappointed at this dividend and the stock fell three points. In our judgment, the directors show good judgment and prudence in electing to strengthen insurance and reserve fund instead of paying increased dividends. The Royal Mail Steam Packet Company, which was for many years in very low water, has entered into a very ambitious and debatable programme of amalgamations, which we recently discussed at length, and it is only by prudent finance and economies that it can expect to realize expectations and to meet obligations.

## THE BUSINESS AND FINANCIAL OUTLOOK

**T**HE next four weeks are likely to be an interesting period in American finance. They will mark the virtual winding up of the canvass for nominations by presidential candidates in both parties, there will be several important bond issues for the banks to finance, the more or less serious labor disturbances will probably be adjusted, and further progress toward sustained trade recovery may be expected. While the country is not enjoying anything like a boom, there is very fair prosperity in many industries, and in the steel trade especially the outlook favors firm prices, with the mills running at nearly full capacity.

Advices show that most of the great mercantile concerns are in excellent position; that they are borrowing less than usual, and that their managers are much more hopeful about the future than they were a month or two ago. Weekly bank clearings at points outside New York City reflect a material gain over the corresponding total for last year and the year before. The political situation is a good deal complicated and it may become more so during this month, but the country is apparently doing a sufficient business to make most merchants forget the possible vicissitudes of a presidential year. The feeling is general that nothing will develop in either party to vitally affect the welfare of the people or to seriously impede business interests. Taking the country as a whole, it may be doubted whether public sentiment is as radical today as it was a year ago when the situation was full of uncertainties, many of which have been eliminated by the developments of the last few months.

This feeling of encouragement is based upon the theory that the improvement already seen in general trade has not yet been fully discounted and that there are better times ahead for the people of the United States. It must be remembered also that the country is just emerging from a long period of liquidation, in the course of which many excesses, developed during the speculative craze of 1909, have been corrected, so that basic conditions are in some respects sounder today than they have been at any time since the panic. People are still conservative in the sense that they are not exerting themselves beyond their means, and there is still a disposition to expand gradually and to take a cautious view of the future.

Sentimentally, at least, the public has been much affected by the loss of the steamship "Titanic." This disaster, ranking as the greatest of the kind in marine history, involves a death loss which had been considered impossible for the most modern steamship afloat. The few millions of property loss sustained is as nothing compared with the frightful loss of life and the readjustment of interests caused by the taking away of so many men who were prominent in business and financial affairs. This occurrence has had a sobering effect upon the community at the moment when the speculative fever was running high and when the feeling of optimism was being, perhaps, somewhat overdone.

During April the New York banks materially strengthened their reserve position, the actual surplus for the Clearing House banks on April 27 last showing a surplus of \$17,425,000 in comparison with the deficit of \$211,000 at the close of March. This improvement was secured chiefly through the reduction of \$55,787,000 in loans. Although there has been no sharp advance in money rates, the tone has been firmer and the demand for money has been sufficiently broad to cause many institutions to draw rather heavily against their foreign credit balances. The money market outlook has been made the more interest-

ing by the prospective borrowings by the railroads and industrial corporations. With the New York City \$65,000,000 fifty-year loan to be offered on May 7 next, the total financing announced since the close of March aggregates considerably more than \$175,000,000. During the balance of the year a great deal of money will have to be raised to provide for the maturing note issues and to finance the greater revival of trade and speculation that will almost inevitably follow the presidential election in November.

While some damage may have been done to winter wheat there is nothing to indicate that crop prospects have been seriously injured by the rather extraordinary weather conditions that have prevailed in the wheat area. Crop scares are usual about this time when expert observers make it their business to give out forecasts covering conditions months ahead. Between now and harvest time a good deal may happen to repair the damage already done, and taking the crops as a whole it may be said that the present outlook is certainly encouraging. That last year's great cotton crop has been a blessing to the whole country, and to the South especially, in spite of the relatively low prices which for a time prevailed, is apparent from the fact that exports of the staple during March reached \$32,800,000 or \$15,000,000 in excess of the heaviest previous March total. The figures show that the foreign purchases of the staple during the nine months ending March were nearly three times greater than last year.

The country's foreign trade position, therefore, is quite remarkable and will certainly have important bearing upon money market conditions next autumn. The international trade balance now stands at more than \$508,000,000, taking the export excess for the nine months ending with March. This is an extraordinary showing, and, except for two occasions, has never been surpassed. Compared with the total export-excess for the same nine months of last year, the trade balance existing in favor of the United States is \$68,000,000, greater now than it was then, while in comparison with the same period of 1910 the gain stands at no less than \$340,000,000. This favorable foreign trade showing is unquestionably at the bottom of much of the optimism that now prevails concerning ultimate trade recovery for the whole United States.

### THE FOURTH NATIONAL BANK OF THE CITY OF NEW YORK.

New York, May 1, 1912.

### NEW TACOMA-SEATTLE-VICTORIA SERVICE

The new service of the Canadian Pacific Railway Company between the ports of Tacoma and Victoria will be inaugurated on May 15. Arrangements have been made with the International Steamship Company to run the "Iroquois" in this service, leaving Tacoma at 8 p. m. daily excepting Saturday, reaching Seattle at 9:30 p. m., and leaving Seattle at 11:30 a. m. for Victoria. On the return trip she will leave Victoria daily except Sunday at 8:30 a. m., calling at Seattle at 1:30 p. m., leaving there at 2 p. m. for Tacoma. This will give Tacoma a good service to Victoria and will also provide a night service from Seattle for Victoria.

On April 19 the Royal Mail Steam Packet Company drew a check for £5,173,572 10s on the Bank of England to complete the purchase of the Union Castle Line, the largest private transaction recorded at the bank.



## SHIPPING AND ALLIED FINANCE

London, April 25, 1912.

Editor of the Pacific Marine Review, Seattle—

The attached abstracts of annual reports of Osaka Shosen Kabushiki Kaisha and Babcock & Wilcox, Ltd., as recently issued on this market, are interesting to your readers. The recent issue of a Canadian municipal loan, the City of Saskatoon, for £229,726 4½ per cent, at 99, in contrast-distinction to an issue by the same city in June, 1910, of £88,600 4½ per cent, at 101½ (which heretofore has been the average price of public issue for 4½ per cent Canadian municipal securities) confirms my prediction, repeated in my financial notes in March issue, that "there is a disposition to raise rates in forthcoming Canadian issues, and that Canada cannot expect to indefinitely escape the penalty of universally higher rates, a feeling and a dictum which is becoming very pronounced both in London and in Paris. Yours faithfully,

H. B. JAYNE.

**Osaka Mercantile Steamship**

The report of the Osaka Shosen Kabushiki Kaisha (Osaka Mercantile Steamship Company, Ltd.) states that the accounts for the half-year to December 31 show a net profit of 914,902 yen, after allowing 591,000 yen—equal to about 5 per cent on the cost of the fleet—for depreciation. The total amount available for distribution, including 856,458 yen brought forward, is 1,771,360 yen; 46,000 yen is placed to reserve and a like sum goes in directors' and auditors' fees, while the payment of a dividend at the rate of 7 per cent per annum absorbs 577,500 yen, leaving 1,101,860 yen to carry forward.

**Babcock & Wilcox, Ltd.**

The report of Babcock & Wilcox, Ltd., of Great Britain, states that the net profit during the year to December 31 amounts to £379,224. To this has to be added the balance brought forward, £68,642, making a balance of £447,866. Deduct the interim dividends paid October 10, of 3 per cent on the preference shares and of 12 per cent on the ordinary shares, amounting to £102,600, leaving a balance of £345,266, from which the directors recommend that the following dividends be paid for the half-year to December 31, viz.: Dividend of 3 per cent on the preference shares (from which income tax is to be deducted), £3,000; dividend of 8 per cent on the ordinary shares (free of income tax), £66,400; bonus of 8 per cent on the ordinary shares (free of income tax), £66,400; placing to the reserve fund £130,000 (which will bring this fund up to £830,000); placing to the staff pension fund, £10,000; and leaving a balance to be carried forward of £69,466. The constantly increasing cost of labor requires continuous extension of the company's organization and the employment of its capital resources and reserves to compensate for the tendency of the rate of profit on the orders being reduced. The use of the company's marine boilers in the British and foreign navies, as well as in the mercantile marine, is increasing. The installations of the company's boilers in the South-eastern and Chatham Railway Company's cross-channel steamers, referred to in last year's report, have been very satisfactory, and orders are now being carried out for boilers for new passenger and mail steamers belonging to the London and Northwestern Railway Company's Irish Channel service, for the Belgian government's Dover-Ostend service, for a large passenger and mail steamer for the Union Steamship Company of New Zealand, etc. As has been stated at several annual meetings, the company's trading has largely extended, and the profits have not only been earned by the use of the nominal capital of the company, but also by the use of the reserve fund and other

assets, so that the rate of profit and dividend, though appearing high on the nominal capital, was much lower, taking the additional employment of the other assets into consideration. It is proposed to adjust this condition by adding the ordinary reserve fund to the capital account, thus increasing the latter to £1,760,000 (being £100,000 6 per cent preference shares and £1,660,000 ordinary shares), and to issue to the ordinary shareholders in respect of the reserve fund one additional fully paid £1 share for each such share now held. It follows that by this re-arrangement the portion of the profits appropriated to dividend would be distributed in future over the larger capital.

**Combination to Monopolize Trade Denied by North German Lloyd**

The answer of the North German Lloyd Steamship Company to the complaint filed by the United States government has been filed in the United States District court. In the answer it is admitted that the company is a common carrier of passengers and freight between Bremen and ports in the United States, but denies that it is a common carrier between inland points of the United States and inland points in Europe, Asia or Africa. It admits that in September, 1908, an agreement was made with the Russian-American line and other steamship lines, whereby since that time there has been a friendly agreement between these lines. It is further admitted that there was strong competition in the spring of 1908 before this agreement was made, but denies that this agreement was for the purpose of preventing competition or maintaining a monopoly.

The S. S. "Rupert City" was recently purchased by the Marine Transportation Company, Ltd., of Vancouver, B. C., and it is the intention of this company to operate this steamer in the Nome trade, or if a good opportunity offers as far south as Mexico. The "Rupert City" is now at the Heffernan drydock, Seattle, where she is being thoroughly overhauled, and it is expected that she will be ready for service on May 20. The "Rupert City" is a British steamer at present registered in London, is constructed of steel, has a carrying capacity of 3,500 tons deadweight, and a speed of 13 knots.

**MARINE INSURANCE MARKET DURING MARCH**

Underwriters at Lloyds experienced a series of heavy losses during the month of March. The most serious casualty was the sinking of the P. & O. liner "Oceana," near Beachy Head. Already a sum of \$3,750,000 has been paid for bullion and specie on board, but naturally underwriters hope to have most, if not all, of it saved. Salvage operations, however, are likely to be protracted as divers can only work in fine weather, and then only for about one hour per day.

The cargo on the "Oceana" is valued at about \$500,000. Another loss which affects London underwriters almost entirely is the wreck of the steamer "Fixley," bound home with nitrate from Iquique. The loss for hull and cargo amounts to \$600,000. Three London steamers, the "Archtor," posted as missing, the "South America" wrecked near Lands End, and the "Isleworth," wrecked at Halifax, N. S., will bring claims for \$575,000. It will, therefore, be seen that apart from the usual losses of ordinary magnitude the market has suffered most severely.

The fleet of the Pacific Mail Steamship Company was renewed last month at the same terms as those paid last year and with the values unchanged. The rates are 4 per cent, underwriters to pay the excess of \$2,500 on all claims.

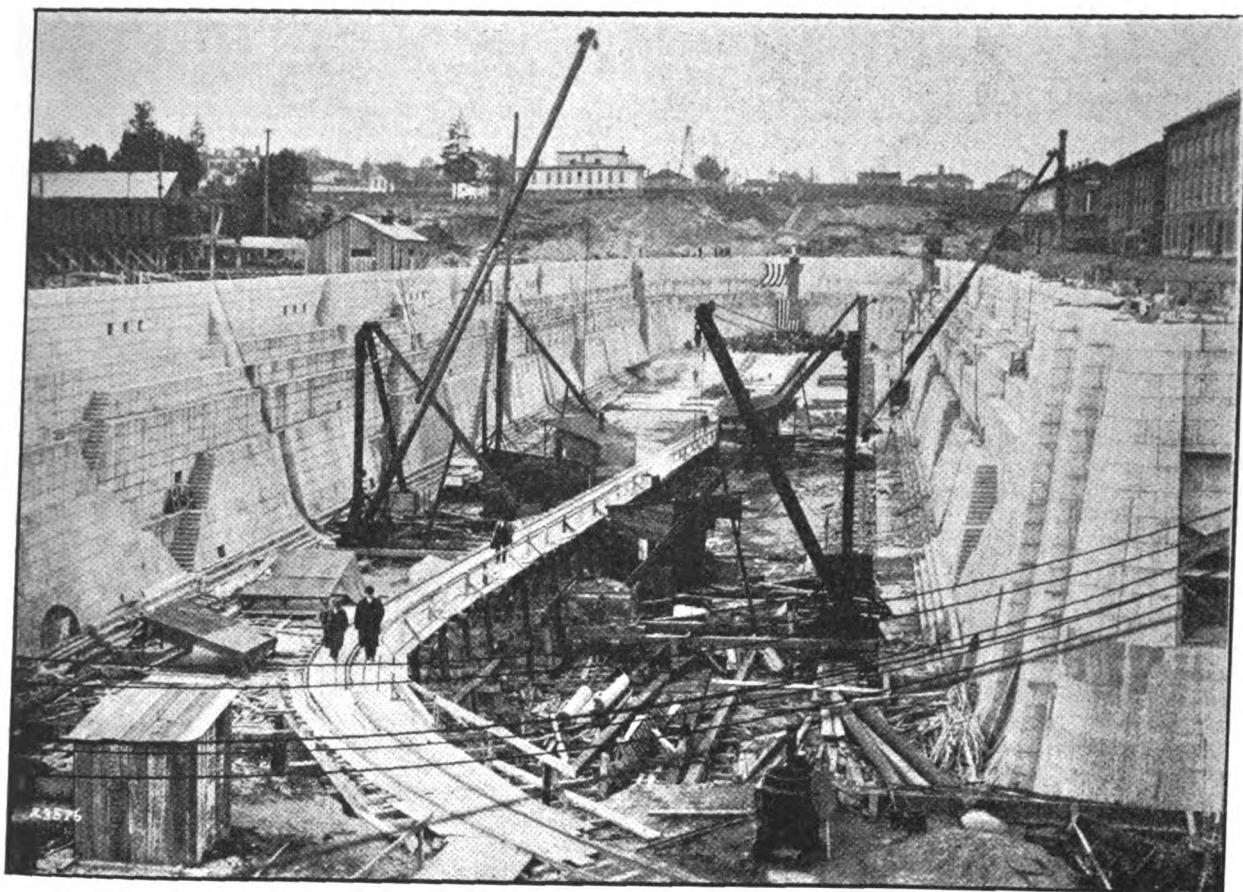


Photo courtesy of Roman's, Colman Bldg., Seattle.

## DRYDOCK NO. 2 OF THE PUGET SOUND NAVY YARD

The above reproduction illustrates Dry Dock No. 2 of the Puget Sound Navy Yard. For the complete description of this splendid addition to the navy yard of the Pacific Northwest we are indebted to V. L. Cottman, Rear Admiral U. S. Navy, commandant at the yard.

No. 2 is the largest dry dock in the United States navy. Its clear dimensions for docking purposes are 800 feet of length, 110 of width, and 35 of depth at mean high water. The total depth from bottom to coping is 47 feet. A disabled battleship drawing 40 feet could come from sea and enter this dock.

These figures may mean little to those who are not accustomed to ships and engineering. When actually seen it appears as an enormous structure; but even then it takes an effort of the imagination to gauge it. These large structures dwarf themselves, excepting where it is practicable to make comparisons.

The three great docks at New York, at Pearl Harbor and at Puget Sound are of dimensions to take any ship which can pass through the locks of the Panama canal, excepting only for length. They will dock any war vessel afloat or any likely to be built for many years to come; and they will dock any commercial ships afloat, with the exception of the latest trans-Atlantic liners. The New York and Pearl Harbor docks are respectively 680 and 780 feet long, against the 800 here, and their depths are 33 and 32 feet, against the 35 of this dock, the largest of all. The Pearl Harbor dock may, however, be lengthened.

The Pearl Harbor dock is lined with concrete, and the New York dock is lined with brick, only a comparatively small amount of granite being used at the entrances and

for copings. This dock, however, is lined throughout with granite, and the material is a home product of the state of Washington, from the quarries at Index.

The pumping plant is of the largest type yet designed in our navy, being equal to that at Pearl Harbor and of greater capacity than that at New York. The pumping machinery is under contract with the Alberger Pump Company of New York, and a considerable portion of it is on the way to the navy yard.

The dock has been built under successive appropriations, the first being made in 1906 and the last in 1911, the total amount being \$2,300,000. The contract for the dock itself was awarded on September 2nd, 1908, to Mr. Charles J. Erickson, of Seattle. It was materially changed in the year 1910, the dock being widened 10 feet. Interesting details of this work in general figures are: Earth excavation, over half a million cubic yards; concrete, over 100,000 cubic yards, and granite, nearly a quarter of a million cubic feet.

The large caisson is under construction by the Seattle Construction & Drydock Company of Seattle, and is nearly complete.

The dock is an excellent and immense piece of work, and has progressed well. It is notable that there have been no serious difficulties, as were experienced in the construction of many other dry docks.

The following is a brief presentation of the main points of interest connected with the construction of Dry Dock No. 2, now nearing completion:

Location: The center line of Dry Dock No. 2 lies on a true north and south meridian and is parallel to and dis-

tant 401 feet 9 inches due west from the center line of Dry Dock No. 1.

Dimensions:	Feet	In.
Elevation of coping .....	127	00
Elevation of mean high water.....	120	00
Elevation of tops of keel and docking keel blocks	84	50
Elevation of sill .....	82	00
Elevation of floor of dock on center line.....	80	00
Elevation of tops of bilge block slides.....	81	00
Length of dock on center line at coping level from outside at head to outside of apron.....	863	00
Length of dock at coping level from inside of coping at head to outer sill.....	820	00
Length of dock on floor from head to outer sill.....	788	00
Length of dock on floor from head to abutment.....	743	00
Width in body of dock at coping.....	145	00
Width between faces of altars at sill level.....	108	00
Width between faces of lowest altars.....	92	00
Width of entrance at coping level.....	123	9 1/8
Width of entrance at level of mean high water.....	122	0 1/8
Depth of center line from coping level to floor of dock .....	47	00
Depth, coping level to sill of dock.....	45	00
Depth, mean high water level to sill of dock.....	38	00

Slope of floor, transverse, from center line to lines 9 feet distant and parallel with center line on either side, descent.....	3
Slope of floor, transverse, from lines parallel with and 9 feet distant from center line on either side to faces of lowest altars, rise.....	6
The general dimensions of the quay walls shall be as follows: West wall, approximate length, measured on outer angle of coping.....	77 00
East wall, approximate length, measured on outer angle of coping, from dry dock wing to angle of quay wall .....	147 00
East wall, approximate length, measured on outer angle of coping, from angle of wall to shore end .....	183 00
Maximum depth from coping to bottom of wall.....	57 00
The general dimensions of the pump well shall be as follows:	
Inside diameter .....	50 00
Depth from coping to top of concrete floor.....	63 00
Character of dry dock proper: Built of concrete, with side walls and entrance coped and faced with granite blocks; the floor from abutment to head between the lowest altars paved with concrete.	

## MARINE INSURANCE NOTES

### Steamship "Titanic"

This has been in every sense a staggering shock to the insurance market, which was commencing to recover from an extraordinary sequence of severe losses.

At this date (London, April 30, 1912), the position, as far as at present known, discloses:

1. Hull insurance, £1,000,000, at the rate of 15s net per cent, average, all claims in excess of £150,000, for the benefit of our non-technical readers, that is to say, all claims for less than £150,000 would be borne by owners.
2. Disbursements for total loss only, for ten voyages, £500,000, a total of £1,500,000 on hull and disbursements.
3. Cargo, exact position unknown, estimated £250,000; £50,000 known to have been placed on rubber consignments and £10,000 on ostrich feathers. Registered mail, values unknown; documents will be mostly covered by duplication; insurance of passengers and baggage cannot be correctly estimated and mostly falls on insurance offices in the United States.
4. Compensation for loss of life, limited by statute to £15 per ton, that is to say £700,000, protection and indemnity clause, is covered in a club formed by the White Star and other companies, to cover protection, indemnity and other risks not covered in the usual policies of marine insurance, and in this case one member of this club is reported to lose £200,000.
5. Compensation to crew. Under the Workmen's Compensation Act this is limited to £300 each for lives lost.

Although this is the largest total loss the marine insurance market has ever suffered no anxiety or difficulty is anticipated in its settlement, as it is well distributed among the marine insurance companies of several nationalities and the underwriting members at Lloyd's.

It is understood that one company admits a loss of £50,000, another £30,000, another £20,000, and that several large "excess lines" were carried at Lloyd's.

In my judgment the rate of 15s net was entirely inadequate for this risk, and is an excellent example of the reduction to absurdity to which intense marine insurance competition has been extended. I hope, and anticipate that the experience with the "Titanic" will forever end the incomprehensible attempt to develop the Canadian Hudson Bay route, in face of geographical, physical and climatic insuperable difficulties, and that the Canadian people, the Canadian Government, Premier Borden and his administration will abandon the Hudson Bay route and vigorously take up the Georgian Bay Canal and/or Wel-

lan Canal routes, which, if expensive, are at least practical for moving grain to Europe.

With the present enormous and yearly increasing production of grain in Canada, and its exposure to destruction by frost, while waiting storage and transportation, no government, especially a government which has wisely or unwisely rejected reciprocity with the United States and the possible relief such reciprocity might have given to such congestion, can "mentally fold its hands in slumber," or longer cherish such impossible routes as Hudson Bay, without being guilty of incompetence and criminal neglect.

I appreciate that in the past many foolish and false prophecies have been made in regard to the impossibility of commercial routes which have subsequently developed into important trade routes, but has it not been conclusively shown by competent authorities by actual residence and by hydrographic expeditions that Hudson Bay is only open to precarious navigation during 60 days of the year?

If the Canadian Government persists in its predecessors' policy of preferring the Hudson Bay route to the Canal routes, it must be prepared to include national insurance, for the London marine insurance market, particularly after its experience with the "Titanic," which will also indefinitely defer attempts to establish extreme express steamer services to Canadian ports, would certainly quote prohibitive rates to and from Hudson Bay.

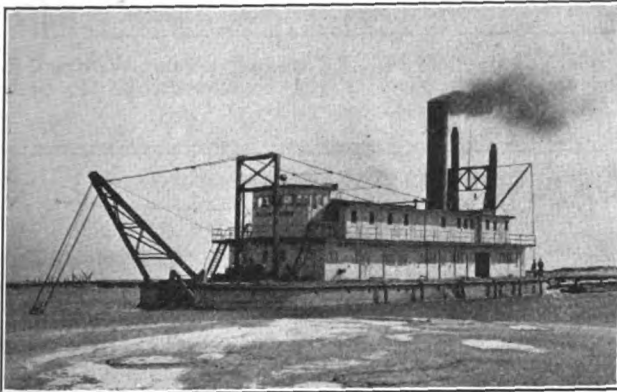
The loss of the "Titanic," aside from the deplorable loss of so many prominently connected with the financial world, including Mr. Christopher Head, of Henry Head & Co., Ltd., insurance brokers, London, who was prominently identified with earthquake insurance following the great earthquake at Jamaica, and was on passage to the West Indies in the "Titanic," via New York, has sensibly disturbed the financial markets, always so sensitive to surrounding influences, by the forced sale of securities to meet insurance losses as well as by the loss of various banking and commercial documents, which will demand time and present some difficulty to identify, indemnify and replace.

It has just transpired that Mr. Head was insured at Lloyd's for £25,000 at 10s per cent against death by accident, for journey from London to West Indies, via New York, and return, which is one of the heavier individual losses falling on the Room, and for which the comparatively nominal premium of £125 has been paid.

H. B. J.

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**MARINE INSURANCE RATES**

**A**CCORDING to London exchanges the loss of the "Titanic" has revived the agitation tending to an increase of insurance rates on liner hulls. It is reported that the "Titanic" was insured for £730,000, on a valuation of £1,000,000, and with additional insurance on "disbursements," the rate, as reported, being 15 shillings per cent for the all risks policy. The policies provided for a deductible average of £150,000; that is, that the owners were to stand the first £150,000, the underwriters being liable only for any excess over that amount. Even with the vaunted "unsinkable" qualities and the large amount for which the owners were liable, the rate is absurd, and it is extremely unlikely that underwriters will again be led into such a display of generosity.

About two years ago rates on so-called tramps were increased by 10 per cent, and later by another 10 per cent, but the attempt to increase the rates on liners failed, and yet, taking the experience of the past three years, I believe that the tramps at the old rates were more profitable than the liners have been.

The cost of repairs has increased very materially in the past few years, and this is given as one reason for the increases made in rates on tramps, yet the increase must be relatively as great for the liners as for the more humble cargo boat, yet for some reason or other the big liner has not only escaped an increase, but has been favored with a rate under which it seems hardly worth while to put the risk through the books.

It is extremely difficult, if not impossible, to obtain sufficient "all risks" insurance on steamers of large value, and therefore the practice of protecting against loss by reason of the total loss of the vessel by reducing the insured value of the steamer to as low a point as the underwriters will stand for and placing additional insurance on "disbursements" against total loss only, has become very common. This also places an additional burden on the underwriter. For instance, the "Titanic" was actually worth about \$7,500,000 and was insured on a valuation of \$5,000,000. The cost of repairs is of course the same, so that in event of a particular average claim on this steamer the underwriter would be obliged to pay 50 per cent more under his policy than if the steamer were fully valued. The impossibility of securing the necessary amount of insurance against all risks is this allowed for by the underwriters, but, in such an event, why should not they also recognize their duty to the stockholders and also other policy holders in keeping the security of their policies good and increase the rate of insurance on the high valued liners commensurate with the decrease in the valuation? It is reported that one company had underwritten £65,000 on hull with average and £20,000 on disbursements. If this was not the net line of the company, which is doubtful, it will cause that company to take notice.

In this connection the chairman of the meeting of the stockholders of the British Dominions General Insurance Company, held on April 11, made the following remarks:

"With regard to hull insurance, for the last five or six years the business on the whole has resulted in a loss to underwriters. During the last year or two various agreements and arrangements have been made by which premiums have been raised. This should have had a beneficial effect, but, owing to the rise in shipping values and the enormously increased cost of building and repairing, underwriters will have to meet much heavier bills, and I much fear that the total benefit of the rise in premiums, which would only put the business on a satisfactory footing provided repairs did not increase, will now be discounted. In all previous periods of insurance business, since it always happens that the rise in the value of steamers and the increased cost of repairs occur simultaneously, underwriters have been compensated for these increased costs by owners increasing the values of their steamers for insurance purposes.

"Unfortunately, however, during the last few years a method of insurance has cropped up in connection with hulls which is called the 'dual insurance.' This enables an owner to keep the values of his steamers at a time like the present at the same level, and to protect himself in the event of a loss by covering an increased amount on disbursements against total loss only. For the first time, therefore, underwriters find themselves, largely through their own fault, responsible for all the additional heavy burden of increased repairs without any compensation on the other side. Serious attempts have been made during the last few months to do away with this form of dual insurance, which is a dangerous modern growth, opposed to all the best principles of insurance. So far, however, it has not been completely checked, although there are growing signs that it will be in the future.

"Taking all things into consideration, therefore—the big boom that is taking place in shipping, the prospects of good trade for the next few years, and the growing determination of underwriters more and more to organize the business—I think that the outlook for the future is a hopeful one, and that this company is in an excellent position to share in the general prosperity."

R. B. H.

**VICTORIA DRYDOCKS**

Following the repeated assertions which have been made that Messrs. William Denny & Bros. of Dumbarton are associated with the B. C. Marine Railway Company, Ltd., of Victoria, B. C., in its application under the Canadian act to encourage drydocks, the Pacific Marine Review is surprised to receive from Messrs. Denny, whose co-operation it had invited in proposed amendments to that act, a written statement "that Messrs. Denny are not taking any interest in Canadian drydocks."

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### THE INTERNATIONAL CONGRESS OF NAVIGATION

A new, world-wide significance is given to the coming twelfth International Congress of Navigation by the "Titanic" catastrophe. Showing, as it has, the futility of present-day precautions under such possible conditions as those which Atlantic shipping may at any time encounter, the disaster throws into strong light the work of this congress of experts.

It is a rather remarkable coincidence that within the last month a preliminary conference has been held in St. Petersburg to consider means of avoiding such unusual dangers to navigation as that which caused the destruction of the "Titanic" and the loss of more than 1,500 lives.

This preliminary conference of the congress held to consider the safety of navigation was called by the imperial Russian government. At the congress held four years ago important papers were read touching upon the general conditions affecting the security of maritime navigation. In one of these papers, J. de Schokalsky, general of the Imperial Russian Navy and one of the most distinguished authorities of the world, mapped out an important line of reform. He pointed out that despite the enormous and varied care bestowed on the question of safety in maritime navigation by all nations, there still exist numerous gaps, which need to be filled, in all branches of the question.

If anything were needed to prove the cogency of this assertion it would be found in those conditions surrounding the "Titanic" disaster, for which no adequate provision has ever been made. And it is to provide for just such contingencies that the International Congress of Navigation has embarked upon its important work of reform.

In the paper delivered by General de Schokalsky the various possible contingencies or dangers that might arise and for which no provision has been made were but briefly touched upon and in an introductory manner. It was stated that the general conditions influencing the safety of navigation may be divided into three heads: First, the ship; second, the staff and equipment; third, the care bestowed on the safety of navigation by the nations themselves. General de Schokalsky enumerated nine measures for insuring safety, among them the provision of adequate means for assisting vessels in distress. While his paper was of the most temperate tone, he declared that there was not a single one of the nine points stated by him which could not be ameliorated by careful international agreement. One of the papers on the subject, written by the distinguished Italian naval constructor, G. Rota, was of peculiar interest. Mr. Rota made the declaration that it is impossible to guarantee a ship from sinking whatever the damage to her hull may be. He had, therefore, stated in advance of the "Titanic" disaster that it is impossible to attain absolute insubmersibility. Mr. Rota went at length into the question of the arrangement of bulkheads to assure safety.

As a result of these and other papers the initiative was taken by the Russian government in a movement looking to reform along this line. The Russian minister of marine

requests that to the list of questions for discussions by the congress there be added that of general conditions for the security of maritime navigation. It was recognized that, to obtain uniformity, an international agreement would be necessary, and a conference of representatives of the various leading maritime nations was recommended. This was recently held in St. Petersburg and its finding will furnish the basis of what will now doubtless be the most important topic before the coming congress when it convenes in Philadelphia May 23.

It is generally admitted that the recent catastrophe will work a revolution in ocean navigation. Coming so soon after this disaster the deliberations of the congress will be awaited with peculiar interest.

#### WRECKS—CASUALTIES AND MISCELLANEOUS REPORTS

"ARGYLL," str., from San Francisco with a cargo of fuel oil, broke tail shaft on April 13 and was towed to San Francisco. Cargo discharged and repairs made.

"F. S. LOOP," str., from Tacoma April 12 for San Francisco, fouled her propeller with a snag and was obliged to go into dry dock at Port Winslow for repairs.

"TITANIC," Br. str., from Southampton April 11 for New York, ran into an iceberg on April 14 and sank in deep water with large loss of life. Full particulars of the disaster and information regarding the insurance will be found in another column.

"GARDINER CITY," bkt., from San Francisco May 6 for Port Gamble, was in collision May 11 with the sch. "Alert" from Grays Harbor for Honolulu, and suffered damage requiring her to return to San Francisco for repairs. The "Alert" received but little damage and proceeded on her voyage.

"WILLAPA," str. from Astoria for Los Angeles, struck the bar in going out of the Columbia river on April 21, damaging the rudder, and was obliged to return to port, in tow.

"WISCOMBE PARK," Br. bk., from Rochester, England, for Vancouver, B. C., put into Stanley, F. I., April 22, with damage to her upper works and the cargo badly damaged.

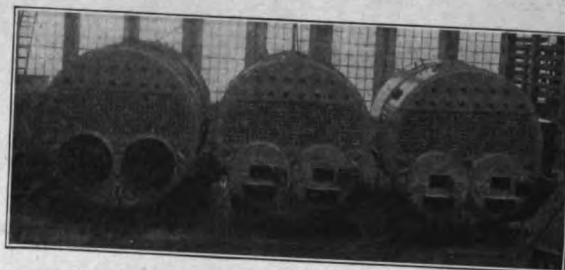
"CITY OF PUEBLA," at Seattle, April 23, loading for San Francisco, had a fire in the cargo, which was extinguished with but very little damage. The steamer continued loading and proceeded.

"MAYFAIR," str., from Los Angeles for Grays Harbor, broke her tail shaft during the passage and was towed into South Bend by the str. "Raymond," arriving there April 25.

"ALAMEDA," str., while attempting to make her wharf at Seattle on April 25, through some misunderstanding of the signals in the engine room, ran into the end of the Colman Dock, cutting entirely through it and running into the "Telegraph," which was lying on the other side. The "Alameda" was but slightly damaged. Damage to

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the dock reported to be about \$18,000.

"TELEGRAPH," str., while lying at the Colman Dock at Seattle April 25, was run into and sunk by the str. "Alameda," which had cut entirely through the dock from the other side. The steamer has been raised and will be docked for examination. Steamer valued at about \$30,000.

"CROWN OF ARRAGON," Br. str., while attempting to make dock at Vancouver April 25, ran into the str. "Talthyblus," which was lying at the dock, and caused damage estimated at \$5,000.

"ADMIRALEN," Nor. whaling str., from Sandefjord, Norway, for Alaska, disabled her rudder and was towed into San Francisco May 1 by the str. "Catania." Repairs will be made and the steamer will proceed.

"HARVARD," str., while lying in Los Angeles Harbor April 28, caught fire and suffered damage to the extent of about \$10,000 before the fire was extinguished.

"JOSEPH RUSS," fishing sch., from Seattle for the halibut banks, was wrecked on Chirikoff Island, southwest of Kodiak, Alaska, on April 20 and became a total loss. All hands saved.

### CASES IN COURT

United States District Court, Western District of Washington, Northern Division: Charles H. Curry, libellant, vs. The Steamboat "Hunter," etc. Memorandum Decision on the merits.

The steamboat "Hunter," when on a trip from Port Townsend to Seattle with a cargo of 2,900 cases of canned salmon on board, was caught by a tiderip off Bush Point and thrown on her beam's end and became waterlogged. For safety the captain and all on board, 13 in number, took refuge in a life boat when it was nearly full of water, having been capsized.

The tug "Monaghan," a gasoline boat of 75 horsepower, passed the "Hunter" a few minutes before the mishap and, her captain having observed the "Hunter" to be in distress, returned and towed her to the beach. At the time of taking hold of her the "Hunter" had partly righted, but her after-end was submerged and she was spilling her cargo. The "Monaghan's" tow line was made fast by the captain of the "Hunter," who, with part of his crew, had returned to her. She was in actual as well as apparent danger of sinking and becoming a total loss, but part of her cargo would probably have been salvaged by the inhabitants of Whidby Island, several of whom came to the scene with boats and did pick up part of the cases of salmon which they found afloat. It is a well-known fact that at the height of the flood tide there is a considerable force of water coming up the strait in the vicinity of Bush Point, meeting the return waters from Hood's Canal and Puget Sound, causing dangerous whirlpools called tiderips, so that the "Monaghan" ventured into apparent, if not actual, peril by returning to assist the "Hunter" under the conditions existing at the time, and it was a difficult task for a tug of her capacity to handle the larger vessel in her waterlogged condition. The time consumed in returning to the "Hunter" and stranding her on the beach was a little more than half an hour, the "Monaghan," however,

voluntarily remained near the "Hunter" several hours thereafter.

This suit is to recover salvage compensation, and it is contested by the parties merely for the purpose of having the Court fix the amount which the libellants should receive. It is the opinion of the Court that the "Monaghan" is entitled to credit for prompt and efficient action in rescuing the "Hunter" and her cargo from a situation of actual peril without which she would probably have foundered and been a total loss. The "Hunter" was restored to serviceable condition at an expense of approximately \$5,000, and she was worth, after being repaired, approximately \$8,000, and the value of the cargo salvaged after deducting expenditures necessary to make it salable, was approximately \$5,000.

The owner of the "Hunter" has made a tender of \$300, which the Court deems to be a reasonable amount to be paid by said party, and it will be decreed that the amount tendered shall be paid to the libellants as full compensation for the salvage and costs chargeable against said claimant, and the case will be dismissed as to him and his stipulators, but without any costs to be taxed against the libellants.

The owner of the cargo entered an appearance in the case by its proctors and filed a bond conditioned to pay to the libellants such salvage, if any, as may be awarded to the libellants, but filed no answer and has not augmented the expenses of the litigation by making an issue or offering evidence. The Court awards \$500 as salvage, to be paid by said party without costs.

The issues of the case are very simple and the litigation has been unnecessarily expensive and the Court considers that justice will be done by leaving each of the parties to pay such fees as the officers have earned by service rendered at their instances respectively, and by awarding no costs to be otherwise paid.

The \$800 awarded as salvage will be apportioned as follows:

\$100 to Captain Wright, master of the "Monaghan;" \$50 to Mr. Graham, the engineer; \$50 to Mr. Taylor, the mate, and the residue to Mr. Curry, the owner.

(Signed) C. H. HANFORD,

United States District Judge.

### RACINE BOAT COMPANY.

The Racine Boat & Auto Company, of 532 First avenue South, Seattle, are western distributors for the Racine-Truscott Shell Lake Boat Company, who have practically the largest boat building plants of this description in the entire country, located at Muskegon, Mich., St. Joseph, Mich., and Shell Lake, Wis.

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## COMMERCIAL MOVEMENTS OF GRAIN AND FLOUR DURING MARCH, 1912.

The commercial movements of grain and flour during March, 1912, are shown in a report just made public by the Bureau of Statistics, Department of Commerce and Labor.

**Interior Grain Movement:** During the month of March, 1912, 53,060,415 bushels of grain were received at 15 primary interior markets. This figure shows a slight decline when compared with the receipts at the same markets in March, 1911, at which time there had been a decided shrinkage as compared with the corresponding month in 1910, the receipts of grain having been 54,351,274 bushels in 1911 and 67,368,470 bushels in 1910. The grain receipts in March of the present year were also considerably smaller than in either January or February. During the three months of the current year, taken collectively, however, the aggregate receipts show a material increase, namely, 193,135,933 bushels in 1912, as compared with 174,150,980 bushels in the corresponding three months of 1911. The decline in receipts was most marked in the case of barley, the March receipts of which have decreased steadily from 8,644,825 bushels in March, 1910, to 5,263,268 bushels in March, 1911, and to 2,947,596 bushels in March, 1912. The receipts of wheat in March, 1912, 12,499,241 bushels, show a slight improvement over the corresponding figures for 1911, which were 11,747,299 bushels. The receipts of oats and rye likewise show a slight improvement, the former having been 15,252,047 bushels in March, 1912, and 12,668,082 bushels in March, 1911; while the receipts of rye were 707,180 bushels in March, 1912, and 654,277 bushels in March, 1911. Corn, of which 21,654,675 bushels were received in March, 1912, shows a slight decline when the receipts are compared with those of 1911, namely, 24,081,348 bushels. If, however, the receipts of corn for the three months of the current year are compared with those of the corresponding months of 1911, a decided increase is shown, namely, 93,605,818 bushels in 1912, as against 75,693,809 bushels received during the same period in 1911.

The receipts of flour at 12 leading interior markets in March, 1912, were almost the same as those in March, 1911, namely, 1,383,996 barrels and 1,399,395 barrels, respectively. In March, 1910, the receipts of flour were 2,139,522 barrels. The receipts of flour during the three months of the current year show a slight increase, however, when compared with the receipts during the corresponding period of 1911.

**Eastward Movement of Grain**—The trunk line movement of grain from Chicago to the East in March, 1912, 15,942,000 bushels, was smaller than in March of the preceding year, although it shows a steady advance when compared with the two preceding months. The eastward movement of flour in March, 1912, 531,757 barrels, shows a decided improvement, both when compared with March, 1911, and with the two months of January and February, 1912.

**Grain Movement at Seaports**—The receipts of grain and flour show a slight improvement at New York in March, 1912, when compared with the same month of the previous year, namely, 8,086,204 bushels and 7,197,087 bushels respectively. At Boston the grain receipts were about the same in March, 1912, as in March, 1911, while at the other seaports from which returns were received, namely, Philadelphia, Baltimore, New Orleans and San Francisco, the receipts show a falling off. The total receipts at the six seaports were 16,963,140 bushels in March, 1912, as compared with 19,396,311 bushels in March, 1911, and 16,986,622 bushels in March, 1910.

**Grain and Flour Exports**—The wheat, corn and flour exports form the four principal Atlantic ports of Boston, New York, Philadelphia and Baltimore, show a decided decline in March, 1912, when compared with the exports during the same month of the preceding year. In March, 1912, the exports of wheat from these ports were 287,139 bushels; corn, 3,624,538 bushels, and flour 358,342 barrels. In March, 1911, the exports from the same ports were 802,432 bushels of wheat, 6,414,958 bushels of corn, and 426,202 barrels of flour.

## PORT WARDEN'S REPORT.

Port of Seattle, Wash., for month of April, 1912.

### Deep Sea Vessels.

Nationality—	Arrivals.		Net Tonnage
	Number		
America .....	121		177,590
Sailing vessels .....	17		23,884
United States .....	1		3,145
British .....	14		53,579
Japanese .....	6		25,091
German .....	1		3,084
Danish .....	1		4,091
Norwegian .....	1		3,411
Total .....	162		293,875

### Departed.

America .....	122	176,308
Sailing vessels .....	26	30,740
United States .....	3	1,256
British .....	12	45,114
Japanese .....	6	25,125
German .....	1	3,084
Danish .....	1	4,091
Total .....	171	285,718

### Passengers.

From and to—	Inbound		Outbound
Foreign and British Columbia .....	7,552		7,223
Coastwise and Alaska .....	4,402		4,607
Local points .....	98,129		98,146
Total .....	110,183		109,976

### IMPORTS.

#### From Coastwise Points.

		Value
Cement, tons .....	22,502	\$ 33,256
Merchandise, tons .....	54,354	888,599
Merchandise, tons .....	542	115,680
Salmon, cases .....	4,600	23,000
Logs, feet .....	13,837,431	118,493
Merchandise, tons .....	9,458	459,060
Merchandise, tons .....	9,458	459,060

#### From Alaska Points.

#### From Local Points.

## Announcement

### Season 1912

On and after March 1st all steamships operating between Seattle and Prince William Sound Ports will take the Inside Passage with stops at Ketchikan and Juneau.

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				(Domestic)			
From the Philippines.				260,251	268,058	750,779	699,807
Hemp, bales	37,424	348,130		Flour Exports from Portland			
Merchandise, tons	23	4,804	352,934	(Foreign)			
From Hawaiian Islands.				Bushels	Value	Bushels	Value
Merchandise, tons	15	2,946		49,000	\$196,000	198,059	\$785,961
Apples, cases	2,595	9,001	11,947	(Domestic)			
From Pacific Ocean.				35,319	162,467	133,816	555,551
Halibut, pounds	2,480,000	101,652	101,652	Tonnage Entered at Portland			
Total value domestic imports				April, 1912	93 vessels	111,678 tons	
From British Columbia.				April, 1911	76 vessels	91,989 tons	
Various			\$ 78,671	Tonnage Cleared from Portland			
From Australia.				April, 1912	90 vessels	105,567 tons	
Merchandise, tons	1,228	6,652	6,653	April, 1911	76 vessels	94,309 tons	
From Germany.				Principal Domestic Imports at Portland by Water			
Various			30,967	Since Jan.			
From France.				April			
Various			10,976	Asphaltum, barrels	7,757	1,1912	18,821
From Scotland.				Butter, cases	1,060	1,976	1,976
Liquors, cases	105	863	863	Canned goods, cases	7,764	46,455	46,455
From Mexico.				Cement, sacks	450,016	918,688	918,688
Merchandise, tons	1,976	10,308	10,308	Cheese, cases	1,737	2,050	2,050
From England.				Coffee, sacks	766	1,985	1,985
China clay, casks	1,040	2,625		Electrical goods, pkgs	2,432	5,880	5,880
E. Ware, cases	30	1,500		Hardware, tons	3,311	9,286	9,286
Fire brick	393,700	6,434		Iron, pkgs	15,699	49,215	49,215
Fire clay, sacks	150	262		Machinery, pkgs	108	1,141	1,141
Linoleum, rolls	70	2,176		Matting, rolls	98	309	309
Liquors, cases	607	2,223		Merchandise, tons	4,803	11,475	11,475
Merchandise, tons	254	15,235	30,455	Miscellaneous, pkgs	37,536	133,716	133,716
From Norway.				Oil, barrels	365,397	1,553,146	1,553,146
Merchandise, tons	22	5,932		Paints and oils, pkgs	7,346	26,063	26,063
Sardines, cases	25	54	5,986	Plaster, sacks	11,054	26,285	26,285
From Italy.				Salmon, cases	30	1,099	1,099
Liquors, cases	100	192		Salt, sacks	24,676	91,929	91,929
Merchandise, tons	92	1,540		Sugar, sacks	21,898	144,619	144,619
Olive oil, cases	250	3,161	4,893	Sulphur, sacks	419	10,635	10,635
From the Orient.				Tobacco, pkgs	4,925	8,839	8,839
Various			1,526,722	Principal Foreign Imports at Portland			
Total value foreign imports				Coffee, sacks	1,250	2,507	2,507

EXPORTS.			
To Coastwise Points.			
Various			\$815,301
To the Philippines.			
Various			128,581
To Hawaiian Islands.			
Various			148,313
To Local Points.			
Coal, tons	1,150	4,025	
Merchandise, tons	11,870	681,905	685,930
To Alaska.			
Various			1,429,318
Total value domestic exports			
To British Columbia.			
Various			\$671,505
To the Orient.			
Various			622,903
To England.			
Lumber, feet	59,212	\$ 1,184	
Salmon, cases	1,149	4,866	6,050
To Germany.			
Lumber, feet	87,899	2,735	2,735
To South America.			
Lumber, feet	1,006,505	13,638	13,638
To Australia.			
Lath, thousands	2,359	2,618	
Lumber, feet	1,753,384	20,796	23,414
Total value foreign exports			

## COMMERCIAL MOVEMENTS AT PORTLAND, ORE.

We publish beneath the monthly report of the Merchants' Exchange of the Port of Portland, showing the principal shipments of lumber, wheat and flour and the principal domestic and foreign imports:

Lumber Exports From Portland (Foreign)			
Feet	Value	Feet	Value
April	Since January 1, 1912	April	Since January 1, 1912
8,797,786	\$ 91,700	28,838,973	\$ 291,905
Domestic—			
15,265,141	160,315	50,925,193	529,836
Wheat Exports From Portland (Foreign)			
Bushels	Value	Bushels	Value
April	Since January 1, 1912	April	Since January 1, 1912
282,632	271,533	2,384,196	2,095,976


TONNAGE MOVEMENT PORT OF SAN FRANCISCO  
MONTH OF APRIL, 1912

From—	Steam.	Sail.
Australia	2,784	3,047
Alaska		254
Atlantic ports	90,321	2,998
Belgium		1,700
British Columbia	16,514	
Chile	1,968	
Great Britain	7,532	
Germany	4,493	
Hawaiian Islands	25,437	483
Hongkong	19,002	
Japan	8,237	1,578
Mexico	23,824	
Panama	15,229	1,993
Peru	2,566	
Philippine Islands	7,399	
Various	3,068	
Coastwise	316,933	34,135
For—	Steam.	Sail.
Australia	7,423	
Alaska	1,672	2,052
Atlantic ports		2,052
British Columbia	36,667	
Chile	9,531	
Germany	6,165	
Hawaiian Islands	41,722	4,876
Hongkong	22,623	
Japan	15,697	
Mexico	6,445	
Panama	21,644	518
Peru	2,566	
Philippine Islands	3,653	
Pacific Islands		382
Coastwise	318,468	42,038

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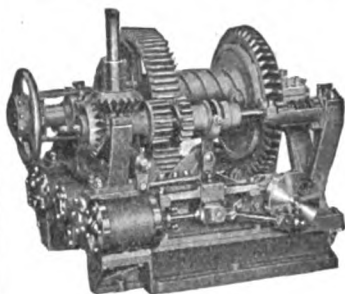
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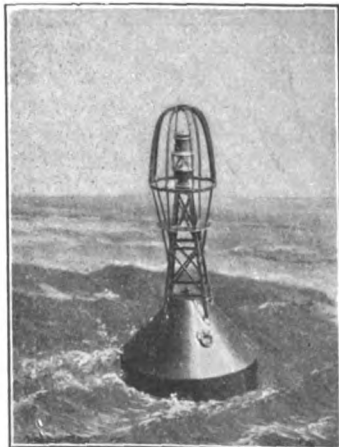
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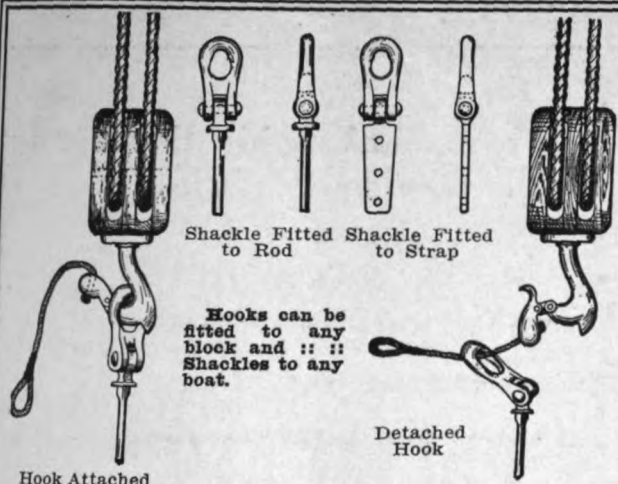
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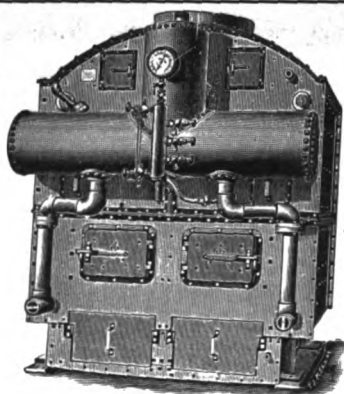
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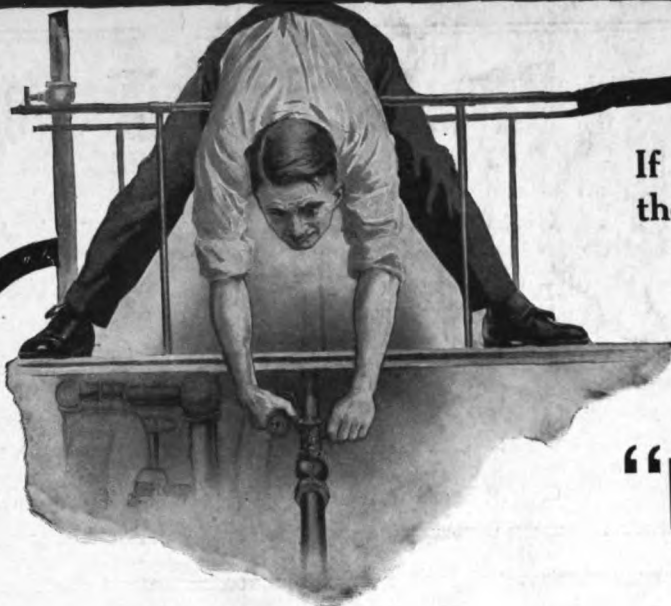
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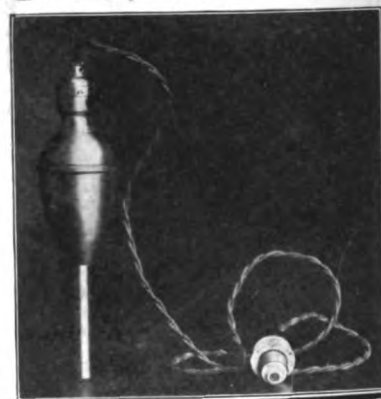
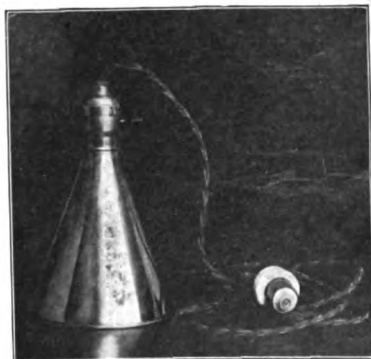


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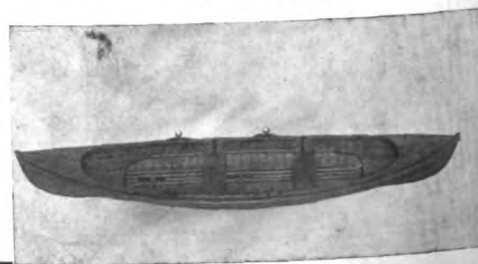
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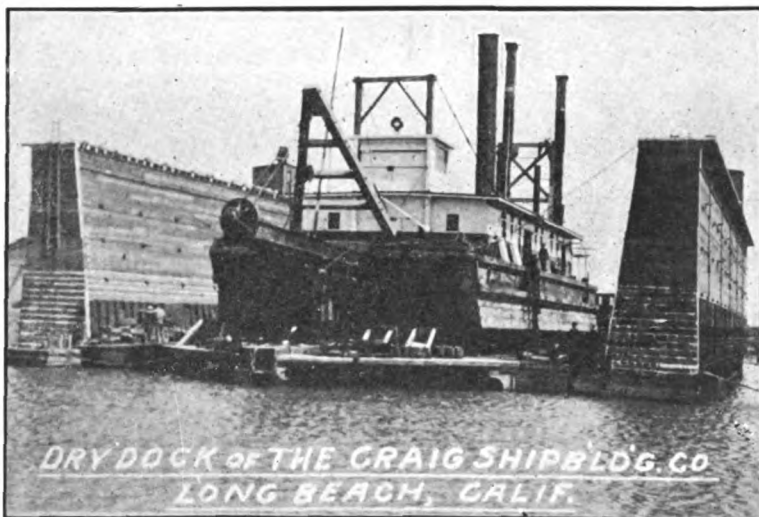
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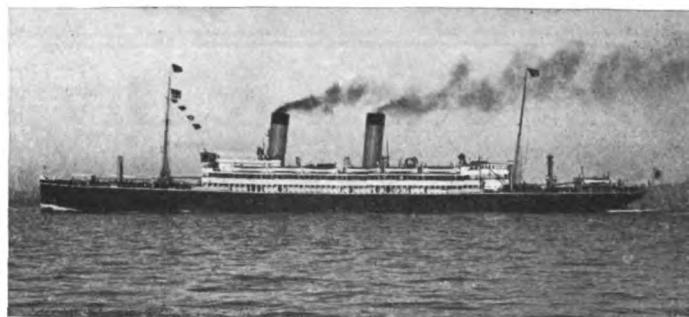
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# PACIFIC MARINE REVIEW

(Copyright June, 1912, by Pacific Marine Review)

VOL. IX

SEATTLE, WASH., U. S. A., JUNE, 1912

No. 6

## OUR SHIPS SHOULD GO THROUGH THE PANAMA CANAL FREE OF TOLLS

**T**HIS victory for the American flag on the ocean—the first recorded in Washington for a long time—is indeed gratifying.

This significant vote of the national House is likely to have far-reaching consequences on the development of the American merchant marine in the ocean trade of the future.—Ed. Note.

Speech of Hon. William Sulzer, of New York, in the House of Representatives, Tuesday, May 21, 1912.

The House being in Committee of the Whole House on the state of the Union and having under consideration the bill (H. R. 21969) to provide for the opening, maintenance, protection and operation of the Panama Canal, and the sanitation and government of the Canal Zone—

Mr. Sulzer said:

Mr. Chairman: I am an American, and I am in favor of American ships—flying the American flag—going through the American canal free of charge. Hence I shall vote for free tolls for all ships flying the flag of my country going through the Panama Canal.

I want to do something to aid the American merchant marine, and free tolls for our own ships will go far to accomplish what patriotic America hopes to see accomplished ere we adjourn.

We all realize that there is a sentiment, growing stronger and stronger every day, throughout the country in favor of doing something to rehabilitate our merchant marine. This is patriotic, eminently proper, and should be encouraged by every true American.

There is no man in this country more anxious and more willing to enact proper legislation to restore the American merchant marine than myself, but I want to do it honestly; I want to do it along constitutional lines, and I want to do it in harmony with that fundamental principle of equal rights to all and special privileges to none.

It is a fact—a most deplorable fact—and every man who has investigated the subject knows it, that we have less registered tonnage for deep-sea carrying trade today than we had 100 years ago. In 1812 the United States, with a population of less than 10,000,000 inhabitants, owned more registered tonnage for ocean carrying trade than the United States in 1912, with a population of over 90,000,000. The American deep-sea tonnage in 1812 was over 1,200,000, and it is now less than 800,000, and, what is worse still, it showed an actual decrease of more than 6,000 tons last year. In 1812 American ships, flying the American flag and manned by American sailors, carried over 90 per cent of our deep-sea trade and a great part of that of all the countries of Europe. Today we carry very little of our own trade and practically none of other countries, notwithstanding the fact that we should be the foremost maritime power in the world.

It is a sad commentary on our growth and greatness that more than nine-tenths of our once great and powerful deep-sea fleet has vanished, and not one new keel for an ocean-going merchant ship is being laid today on either our Atlantic or Pacific coast, while the vessels of foreign nations through our ports and monopolize more than nine-tenths of all our import and export commerce.

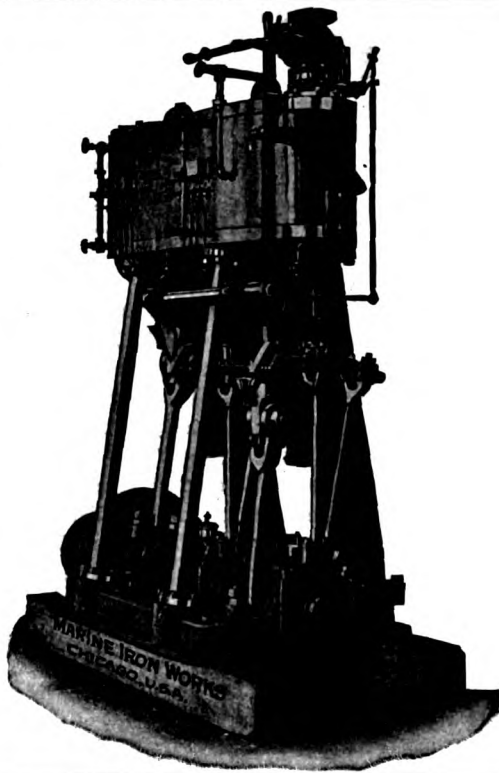
In 1812 over 92 per cent of our export and import trade was carried in American bottoms; in 1912 less than 8 per cent of our imports and exports are carried in American ships. The United States pays to the owners of foreign deep-sea vessels for conveying our freight and passengers over \$300,000,000 a year, and much of this vast sum of money goes to the owners of foreign steamers which are regularly enrolled on the merchant-cruiser lists of European governments, manned by naval reserve officers and sailors, and available for immediate service against us in case of war. The British Empire has 16,800,000 tons of merchant shipping; Germany has 8,960,000 tons; France, 3,680,000; Norway, 1,960,000; and Italy, 1,580,000. The larger part of all these great deep-sea fleets is engaged in the ocean carrying trade, but the government of the United States, which produces and exports more merchandise than any other nation on earth, has a fleet registry of deep-sea vessels of less than 800,000 tons. These comparisons challenge our intelligence and constitute an indictment against our boasted patriotism.

Mr. Chairman, I am opposed to the position in this matter taken by the gentleman from Georgia (Mr. Adamson). He is opposed to free tolls for our ships. I am in favor of free tolls to help our merchant marine. I always have been, and I always will be in favor of aiding the American merchant marine. Ever since I have been a member of Congress I have endeavored to do something for our shipbuilding industries and to restore our deep-sea commerce. I have a bill pending in Congress for preferential duties in favor of American ships, and if that bill could be passed in ten years we would again see the flag of our country on every sea, and ere long we would have as fine a merchant marine as any country in the world. The bill is a short one. I will read it. It is H. R. 14102, and reads as follows:

"A bill (H. R. 14102) to encourage the American merchant marine and American commerce, and for other purposes.

"Be it enacted, etc., That a reduction of 5 per cent ad valorem of the customs duties now or hereafter imposed by law shall be allowed on all goods, wares, or merchandise imported into the United States in vessels of the United States; and in cases where no customs duties are imposed by a law on goods, wares, and merchandise imported into the United States there shall be levied, collected, and paid a duty of 2 per cent ad valorem if such goods, wares, or merchandise are imported in vessels not of the United States. The said reduction of 5 per cent in duty herein provided for shall not apply to goods, wares, and merchandise not of the growth, production, or manufacture of countries contiguous to or bordering upon the territory of the United States, when imported into the United States by land transportation or land vehicles or conveyances through or from ports of other places of countries bordering upon the United States, if the same shall have been brought to such ports in vessels not of the United States; in cases where no customs duties are imposed by law on such goods, wares, and merchandise so imported, a duty of 2 per cent ad valorem shall be levied, collected and paid. Said reduction of 5 per cent in duty shall not apply in cases where goods, wares or merchandise are trans-shipped or transferred from a foreign vessel, port or place to a vessel of the United States for the purpose of evading the provisions





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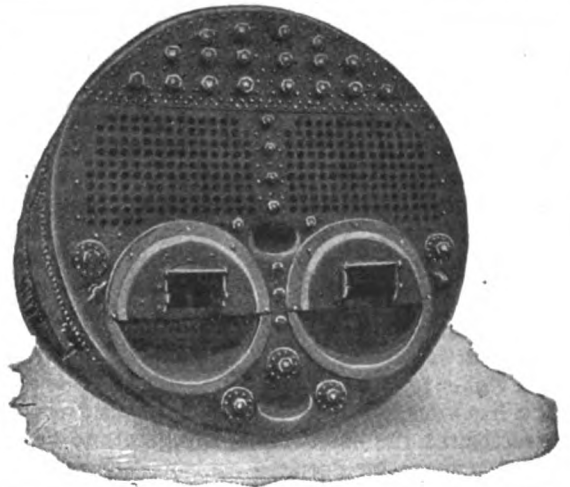
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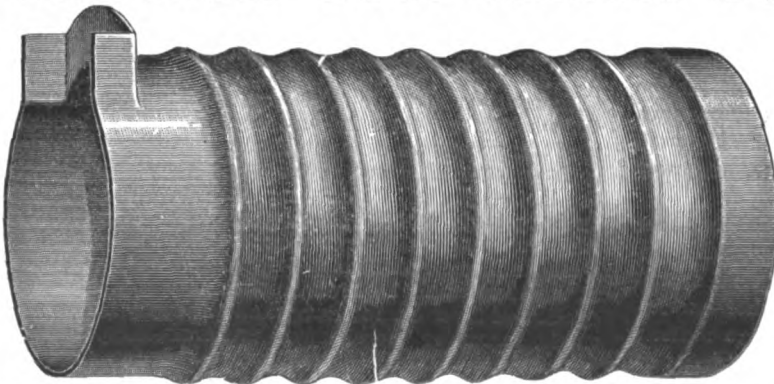
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of this act, and in such cases no exemption from duty shall be granted.

"Sec. 2. That the master, agent, or owner of any registered vessel of the United States shall be exempt from the tax of \$4 for every alien entering the United States on such vessel prescribed by section 1 of the act of February 20, 1907, entitled 'An act to regulate the immigration of aliens into the United States.'

"Sec. 3. That the President shall have power, and it shall be his duty, to give notice, within 10 days after the passage of this act, to all foreign countries with which commercial agreements have been entered into making any provision or provisions which are in conflict with sections 1 or 2 of this act of the intention of the United States to terminate such agreement at a time specified in said notice, which time shall in no case be longer than the period of time specified in such agreements, respectively, for notice for their termination: Provided, That until the expiration of the period when the notice of intention to terminate hereinafter provided for shall have become effective, or until such date prior thereto as the high contracting parties may by mutual consent select, the terms of said commercial agreement shall remain in force.

"Sec. 4. That all acts and parts of acts in conflict with the provisions of this act are hereby repealed, and that, except as provided in the first and second sections hereof, this act shall take effect and be in force from and after its passage."

Mr. Chairman, that bill speaks for itself, and needs no apology from any patriotic American citizen. It has been indorsed by the leading commercial organizations of our country. If there is anything the American people are anxious to do, it is to put the flag—the flag of the United States—again upon the high seas. There are several ways to do it. One way is by free ships; another way is by ship subsidy; a third way is by preferential duties; and fourth way is by free tolls through our own canal. I am against ship subsidies. I have fought ship subsidies ever since I have been a member of Congress, and I will keep up the fight to the end. I will vote now for free ships through our canal. Here is one way to do something now for the American merchant marine. Let us do it while we have the opportunity.

"For years, in Congress and out of Congress, I have been advocating honest and intelligent legislation to restore our merchant marine, and for years the men in control of Congress have turned to my appeals a deaf ear. The Congress of the United States is responsible for the present deplorable condition of our merchant marine, and every intelligent student of the subject is aware of the fact.

Preferential duties in favor of American-built ships and against ships flying the flag of a foreign country was the policy so successfully in operation in this country up to 1828, when, to please foreign interests, the law was suspended, and from that day to this our prestige on the high seas has been declining until it is less today than it was a century ago.

Many true friends of our merchant marine believe that if this policy of the fathers was restored it would immediately revive our overseas carrying trade and in a very few years build up our ship industries so that we would again secure our share of the ocean commerce of the world and save millions and millions of dollars that we pay annually to foreign shipowners. In reading the report of the Merchant Marine Commission I observe that several of the largest shipbuilders testified that they formerly believed in subsidies but had changed their opinions and now favored my plan for preferential duties.

There seems to be but one objection, so far as I can learn, to a return to this policy of the fathers, and this objection comes from the advocates of ship subsidies, who declare that we have commercial treaties with foreign governments containing the favored-nation clause, and in order to inaugurate the policy of preferential duties it will be necessary to change our commercial treaties, and this can

not be done without giving these favored nations one year's notice.

This objection, however, is more apparent than real, for there is no doubt the change could be made if this government wanted to make it, and a year's notice to bring it about would cause no great delay, especially when we consider that nothing has been done for our deep-sea shipping in more than a quarter of a century.

Mr. Hamlin.—Will the gentleman yield?

Mr. Sulzer.—I can not yield. I have only a few moments. Here is a way, I say, to do something now for the American merchant marine. We can give the ships of the United States the preference. We can allow our own ships, built by American workmen in American shipyards, and flying the American flag, to go through our own canal free of tolls. (Applause.) I am in favor of that.

In this connection I must take exception to the remarks of the gentleman from Minnesota (Mr. Stevens) regarding the construction of the Hay-Pauncefote treaty. There is nothing in that treaty that can be construed in opposition to my plan for free tolls for American ships. I stand here as chairman of the Committee on Foreign Affairs of this House, having given careful study to that treaty, and to every circumstance connected with it, and I speak advisedly, and for our distinguished Secretary of State, when I say to this House that there is not a line in that treaty that precludes the Government of the United States from permitting our own ships going through the Panama Canal free of tolls. (Applause.)

If you want to bring about a situation such as the gentleman from Georgia (Mr. Adamson) has mentioned; if you want to get this matter some day into The Hague Tribunal; if you want to invite a foreign lawsuit, then pass this bill precluding the ships of the United States from going through our own canal free. That may foreclose our rights in the future. That may cast a doubt upon our construction of this treaty, and at some future time involve the Government of the United States in a controversy of international importance regarding our rights to grant preference to our own ships using our own canal which the people of this country has paid for and have built. I am opposed to any legislation that will bring about such a contingency. To me the treaty is clear and plain. It does not admit of the construction urged by my friend from Minnesota. I am opposed now to bringing this Hay-Pauncefote treaty into the realm of dispute. I am opposed to inviting at some future time an international lawsuit. In my judgment the only way that we can prevent that is for the representatives of the American people to stand up here and vote in favor of American ships going through the canal free of tolls. (Applause.)

Mr. Chairman, I see my time is nearly up. Let me say, in conclusion, that the policy by which I propose to restore our merchant marine is not a makeshift. It is not new, having been the law of our country from 1792 to 1828, when it was suspended, and that suspension was one of the greatest political blunders in all our maritime history. It is not a temporary expedient. It is a permanent remedy. It has been tried and not found wanting. It is the easiest way to restore the American merchant marine. Adopted again as our policy and upon the statute books, it will never be repealed, but, on the contrary, speedily restore our ocean-carrying trade, revive our shipbuilding industries, give employment in our shipyards to thousands and thousands of men in all parts of the country, bring about an era of prosperity such as we have never known before in our shipping trade and deep-sea commerce, place our flag on every sea and in every port, and make our seamen what they were in the historic days of the Republic—the pride of America and the masters of the ocean highways of the world. (Applause.)

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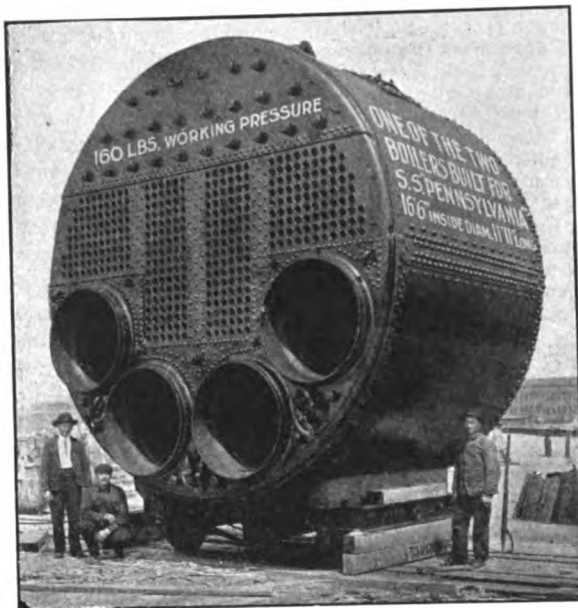
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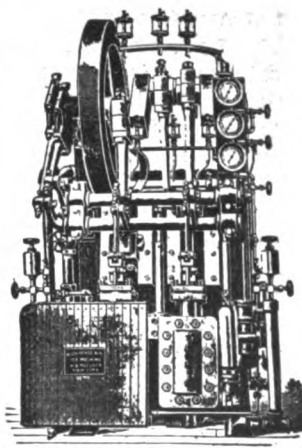
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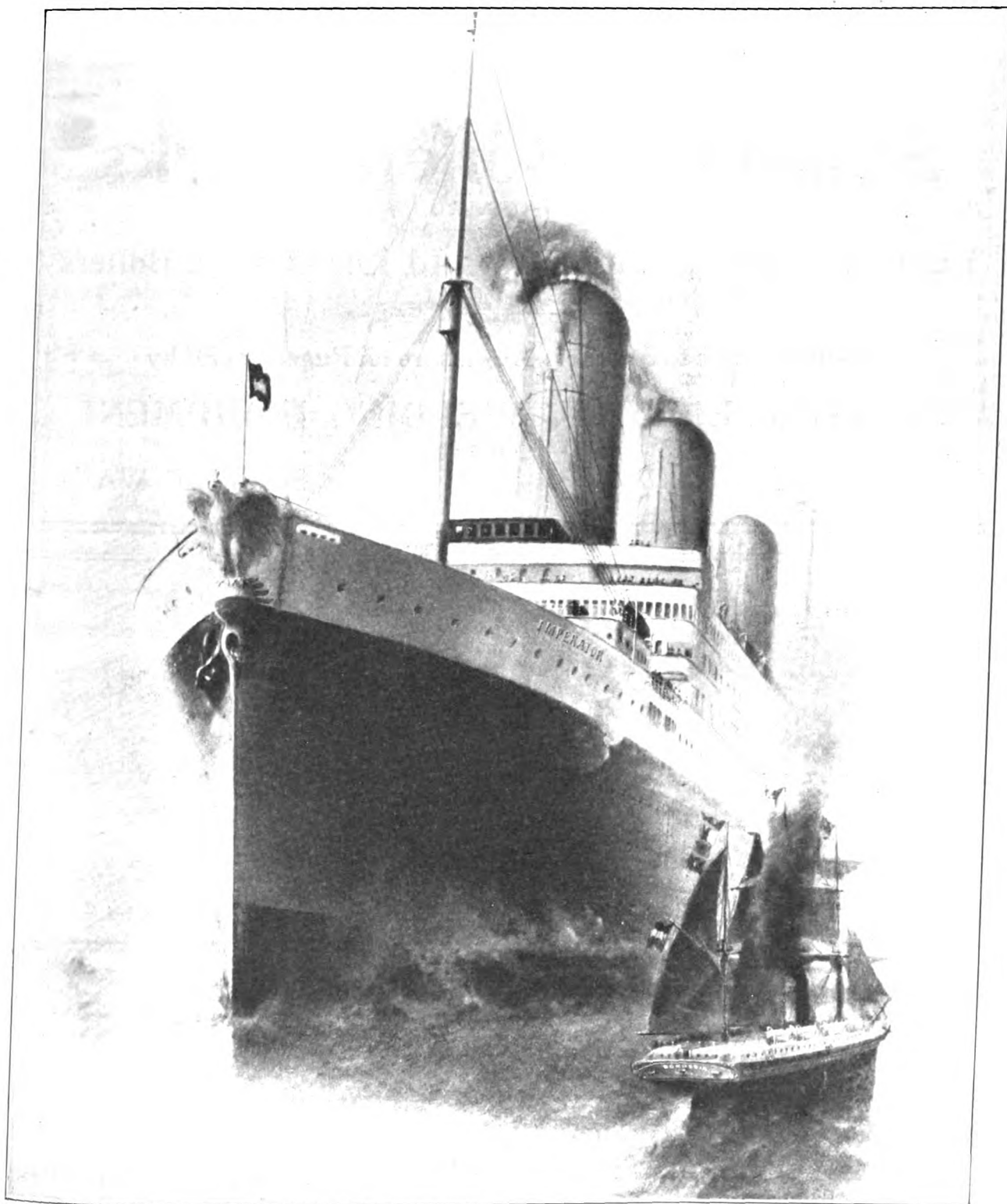


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S. S. "Imperator," Latest and Largest of Fleet of Hamburg-American Line, and S. S. "Borussia," First and Smallest.

**T**HE S. S. "Imperator," the new mammoth liner of the Hamburg-American Line, the largest vessel under the German flag and at present the biggest ship in the world (50,000 tons), was successfully launched on May 23 at the Vulcan Shipbuilding Works at Hamburg, Germany. Emperor William II acted as sponsor.

The laying of the keel of the "Imperator" was begun on June 18, 1910, under the 150-foot high gantrys of the Vulcan Shipbuilding Works at Hamburg. Two hundred and seventy-five floor plates were attached to each side of the

keel, five hundred and fifty in all. The double bottom is of unusually large dimensions, having a length of 767½ feet, width of 85 feet and is over 6 feet in height, with a cubic capacity of 291,000 gallons. Rivets weighing as much as 3½ pounds were used in assembling this mass of metal into one rigid construction.

In the spring of 1911 the setting in position of the massive frames and their covering of steel plates was in progress. The bulkheads run both longitudinally and transversely throughout the ship, filling all the require-



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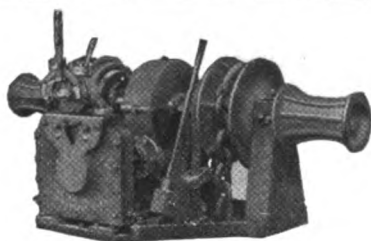
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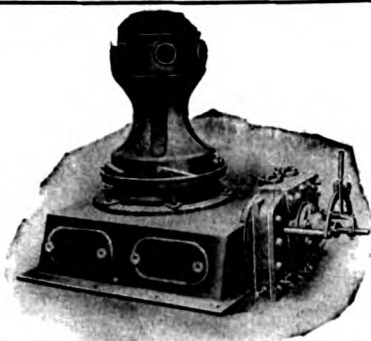
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ments of the highest German marine authorities. By dividing the vessel into numerous watertight compartments safety is insured, even if two or more adjacent compartments were filled with water through a leak in the outer shell. The "Imperator's" bulkheads are of exceptional strength and height. There are twelve transverse bulkheads throughout the ship and one longitudinal bulkhead in the engine room, and they extend from the bottom fifty feet upwards to the second deck, far above the water line. Bunker space is provided longitudinal along the different boiler rooms. The forward or collision bulkhead extends through to the first deck. An idea of the strength of their construction is gained by noting the weights of the braces supporting them, running from 2,200 pounds to 9,900 pounds. The single amidship bulkhead alone added a weight of 66 tons to the ship.

The "Imperator's" length is 900 feet, beam 96 feet and her depth 62 feet. The boat deck will be 100 feet, and trucks of the masts will be 246 feet above the keel, exceeding that of the loftiest sailing vessel afloat. The funnels will be 69 feet long and the oval openings will measure 29 feet by 18 feet. The rudder alone weighs 90 tons, and the diameter of the rudder stock is  $2\frac{1}{2}$  feet.

The propelling machinery was built and erected in the shops of the Vulcan works.

The immense rotors of the turbines of 50,000 blades weigh 135 tons and develop over 22,000 horsepower. The casing inclosing the rotors is  $7\frac{1}{2}$  meters (25 feet) long, and  $5\frac{1}{2}$  meters (18 feet) wide. The shafts are  $1\frac{1}{2}$  feet in diameter, and the four-blade propellers, of Turbadium bronze, are 5 meters (16½ feet) in diameter. The various castings and materials used in the construction of the machinery were subjected to hydraulic pressure tests to determine their strength and to locate any possible weakness, carrying ample assurance of safety in construction to builders and passengers. Five monster anchors, the largest weighing 26,450 pounds and the smallest 4,850, with a total length of 1,200 meters (660 fathoms) of anchor chain, will be provided for the ground tackle equipment. The highest point of the bow of the ship will be adorned by an immense bronze eagle, the work of Prof. Bruno Kruse, of Berlin.

The great size of the "Imperator" has enabled her designers to allow unusual space for passenger accommodations. Characterized by a spaciousness unheard of before in marine construction, the various staterooms, public saloons and halls will be unique. The tendency in building each new ship has been toward increasing the size of the staterooms, to entirely dispel the idea of cramped quarters formerly so prevalent, and to provide rooms resembling those ashore. Formerly berths were used, placed one above the other. These also have been entirely eliminated. In the "Imperator's" first cabin there will be no built-in berths at all. Metal bedsteads of ample proportions will be used instead. Another step forward in keeping with the unrivaled advantages possessed by the "Imperator" will be the large number of single berth rooms. No more will the trans-oceanic traveler be compelled to share his room with one or more strangers. The conveniences offered by single and two-person rooms will not only be found in the first cabin, but in the second cabin as well. The generous proportions of the staterooms will allow for the construction of large wardrobes, better toilet facilities, and an increase in the size of tables, chairs and sofas will be evident. Particular attention is called to the almost total elimination, in the first cabin, of the folding washstand, formerly regarded as indispensable on ship-board. In its place will be a commodious marble washstand with running hot and cold water and large mirrors.

The staircases, passageways, decks and saloons will be remarkable for their spaciousness. The grand main stair-

cases, of which there are three in the first cabin, have a height of 17 meters (57 feet) and the entrance hall is 29 meters (95 feet) wide and 21 meters (69 feet) long. On the various entrance halls will be situated the offices of the chief steward, purser, information bureau, baggage master, physician's office with waiting room and apothecary, book store and florist shop. The passenger elevators, running through five decks, will also be in evidence. The various saloons in which passengers will dine, read, write, or gather for social and festive occasions, will be remarkable for their splendid proportions and their luxurious and decorative treatment. The Ritz-Carlton restaurant with veranda cafe, which have been favored with such general approval on the steamers "Amerika" and "Kaiserin Auguste Victoria," will add to the pleasures aboard. A ballroom, superbly appointed, the only other example of which now afloat is on the Hamburg-American Line's steamship "Victoria Luise," will be the scene of concerts, entertainments and dances, which were formerly held on deck and therefore dependent upon weather conditions. First cabin passengers will have two large covered promenade decks and one open promenade. The upper promenade deck will be inclosed in the front and along two-thirds of the length of each side by heavy plate-glass windows to shelter the passengers from the high winds. This deck will be 3 meters (10 feet) high and will vary in width from 5 to 7 meters (16 to 23 feet). The boat deck space available for promenading will naturally be restricted by the placing of sufficient lifeboats to accommodate all on board, excepting during pleasant weather, when the boats can be swung outward, thus leaving more space available for passengers.

The gymnasiums on the Hamburg-American Line ships have been well known for many years and have been beneficially used by passengers of all ages. For the first time at sea the second cabin will also be provided with a gymnasium. German gymnastic apparatus will supplement that of the electrically driven Zander apparatus. Bathing facilities on board are unusual in scope. No less than 220 baths and showers have been provided for all classes. A splendidly appointed swimming pool with all appliances for various hygienic and medical baths is provided. The installation and use of a swimming pool on an ocean steamer is dependent in a great measure upon the steadiness of the ship at sea. The large dimensions of the "Imperator" assure this steadiness.

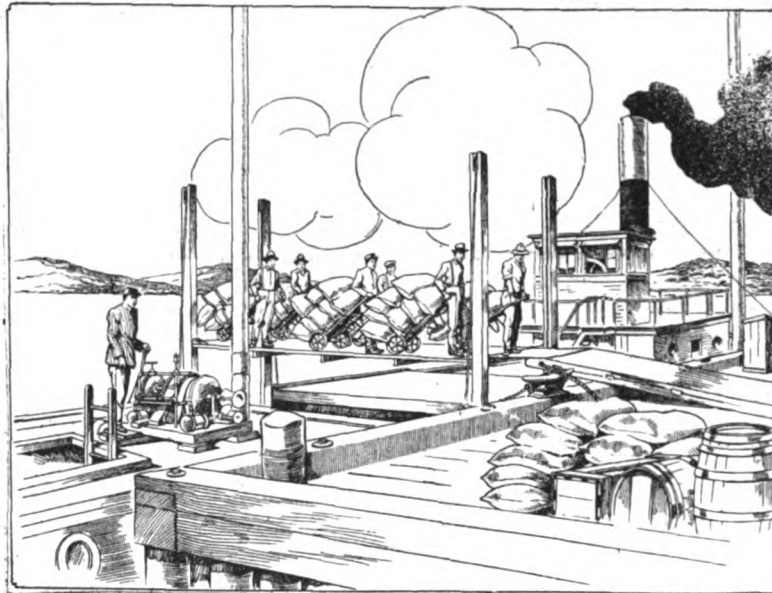
To further guarantee a smooth passage, even during rough weather, the well-known "compensating tanks" of the Frahm system have been built into the ship. The total length of the bath is 20 meters (65 feet) and the width  $12\frac{1}{2}$  meters (41 feet). The pool within will be 12 meters (39 feet) long and  $6\frac{1}{2}$  meters (21 feet) wide and  $3\frac{1}{2}$  meters (9 feet) deep. The greatest depth of water will be  $2\frac{1}{4}$  meters (7 feet). The sea water in the pool will be constantly renewed through decorative cascades. Adjacent to the pool will be comfortable rest rooms with spacious sofa couches and wall decorations in the Pompeian style. Electric baths, massage apparatus, steam baths and hairdressing saloons with the most modern equipments will be provided.

For the care and maintenance of passengers and the ship an exceptionally large crew is required, numbering over 1,100 persons. Of particular interest is the fact that a large number of able seamen will be attached to the deck personnel. Every possible factor for attaining the highest possible safety has been considered and appropriated. The bulkheads of the "Imperator" are provided with 36 watertight doors which are fitted with an automatic closing system, operated by the use of electric and pneumatic power, enabling complete control of all doors from the navigating bridge. Loud-speaking telephones connect the various navigating and engine departments of the ship. Electric an-

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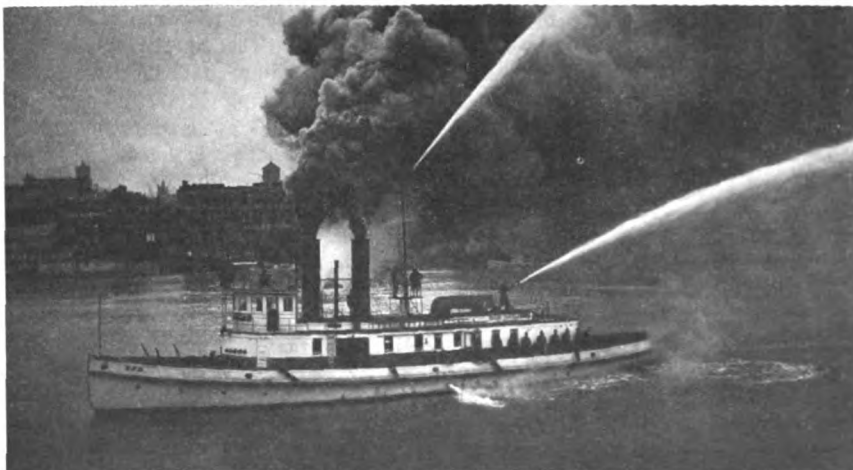
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nunciators enable the captain to ascertain whether his order has been correctly received and carried out. As a further aid to safety, and following the policy of the company to provide the best devices, there will be installed the very latest practical nautical instrument, the Gyroscopic compass, which is not affected by magnetic disturbances so prevalent on iron and steel ships. Submarine signals and wireless telegraphic outfits of ample power, the value of which have been amply proven, will be installed. Careful attention has been given to the navigating department of the "Imperator." Two experienced first officers will be on duty, one of whom will devote his efforts solely to the navigation and safety of the ship. Not only will all possible devices and aids be installed, but careful attention to all the requirements of travel at sea, the laws of the nations regarding same, and the definite, exact instructions of the Hamburg-American Line's own bureau of navigation will be observed by the officers of the ship. The lifeboats are capable and seaworthy, and enough will be provided to insure room for every passenger and the whole crew. Life-buoys which will show a light upon contact with the water are placed at various advantageous places on board. The steam fire-fighting apparatus is of the latest and most approved type. As a special protection against fire a number of smoke bulkheads have been constructed in the passenger decks. Not only will every practical mechanical device be installed, but every possible facility for their use by the crew has been provided for. Station bells locating the number and position of each man on board, from the captain down to the last trimmer, no matter what the occasion or stress, will assemble the crew into a completely organized force, able to control any situation. A total of 9,500 electric lamps are placed throughout the vessel. Current is generated by 5 turbine dynamos, of 2,000 amperes and 110 volts, and a sixth dynamo of 100 amperes is placed above the water line, insuring light even if the machines in the lower engine room are disabled by encroaching water. A completely fitted machine shop will be situated in the forward engine room, containing all the latest and most powerful machines, including lathes and drills, planers, etc., enabling repairs when possible during the trip.

The question has been raised whether the development of such gigantic structures is justified by the needs of the world's commercial requirements and not merely to justify their projector's desire to excel and to have an advantage over competitors. Certain it is that the safety of ocean travel is not diminished by the construction of ships of large dimensions, but, on the contrary, is greatly increased. Professor Pagel, of the Germanic Lloyd, states that safety of travel at sea increases with the size of the ships. He demonstrates in detail why the stability and reserved buoyancy of the large ship exceeds that of the smaller vessel. The ability of the large ship to withstand the effects of sea and wind are well known. The extreme steadiness of the large ship even in a rough sea has been looked upon as a boon by those susceptible to seasickness. But the most vital consideration in reference to construction, materials and methods of insuring safety as laid down by the highest authorities, such as the Germanic Lloyds, the immigration authorities and other bodies, are as thoroughly and conscientiously applied in the large vessel as in her small sister, with the additional advantage that in the larger vessel these measures for safety can be carried out in a stronger and even more satisfactory way. With particular emphasis does the foregoing apply to that most important modern safety provision—the division of the ship into watertight compartments. The smaller ship cannot practically be divided into so many units of safety as exemplified by the compartments of the large ship, nor

can the systems of having double, triple and even quadruple screws with their proven convenience and safety be applied so easily in the small ship.

#### IMPROVEMENTS IN JAPANESE SHIPYARDS

The Mitsu Bishi Dockyard & Engine Works have obtained permission from the Japanese Government to reclaim about 470,000 square feet of land from the harbor in front of the shipyard. This land will be used for the extension of the company's works, to meet the requirements for building a 27,000-ton battleship cruiser for the Japanese Navy. The same company is also going to build a small shipyard near Shimonoseki, to take care of the docking and repairing of small steamers in those waters. Vessels up to 3,500 tons will be accommodated.

Extensive improvements in the yards, docks and machine shops are being made at the Government Navy Yard at Sasebo, about 46 miles north of Nagasaki. The large wharf is about half completed, and when finished will be the largest of its kind in the Orient, accommodating eight large battleships at one time. It will be connected with the railroad. The construction of a dry dock 777 feet long, 111 feet wide at the bottom and 38 feet deep is about completed. This dry dock will accommodate ships of 30,000 tons, being the largest in the Orient. The engine works, machine shops, foundry, etc., are being extended to facilitate the execution of all kinds of work at the yard.

#### HALIBUT STEAMER NEARING COMPLETION AT THE YARDS OF J. F. DUTHIE & CO.

The S. S. "Starr," now under construction at the yards of J. F. Duthie & Co., for the San Juan Fish & Packing Company of Seattle, is 140 feet over all, 25 feet 6 inches beam, 13 feet 6 inches depth of hold and equipped with triple expansion engines of 800 I. H. P., to which steam is supplied by Scotch Marine boilers, 13 feet 6 inches diameter and 11 feet in length.

Moore & Scott's improved high pressure oil fuel system, with a steaming radius of 4,000 miles, is to be installed.

This new halibut boat will be equipped with the Hyde combined hand and steam steering gear. The keel for this vessel was laid about thirty days ago, and as a result of the rapid progress made in the construction, the "Starr" will be ready for her trial trip during the third week in July.

The "Jutlandia," the first twin-screw ocean-going motor vessel built in Great Britain by Messrs. Barclay-Curle & Co., Whiteinch, for the East Asiatic Company, for service between Copenhagen and Bankok, has recently made her final and most successful trial trip in the Firth of Clyde, with over 100 shipbuilding experts on board, before being handed over to her owners. The vessel was designed to attain a speed of 10.5 to 11 knots, but considerably exceeded this speed, averaging 12.6 knots per hour. Her dimensions are: Length, 370 feet; beam, 53 feet; depth, 35 feet; gross tonnage, 5,300; gross carrying capacity, 7,400 tons.

The E. K. Wood Lumber Company of San Francisco are building a wooden steamer at their yard at Grays Harbor, to be of the following dimensions: Length, 205 feet; beam, 4 feet 6 inches; depth of hold, 14 feet 6 inches; capacity, 1,000,000 feet. The vessel will be an oil burner and is to be equipped with all the improved devices for handling cargo with dispatch.

The steamer now building for the Vancouver service of the Canadian Australian Royal Mail Line at the yards of Messrs. John Brown & Sons, Clydebank, Glasgow, will be 522 feet in length, and have a gross tonnage of 13,500 tons.



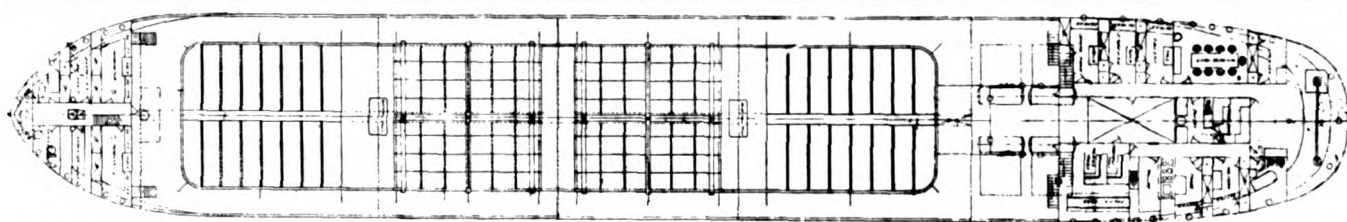
## MONTHLY SHIPBUILDING RETURNS

The Department of Commerce and Labor, Bureau of Navigation, Washington, reports 261 sailing, steam, and unrigged vessels of 35,302 gross tons built in the United States and officially numbered during the month of May, 1912, as follows:

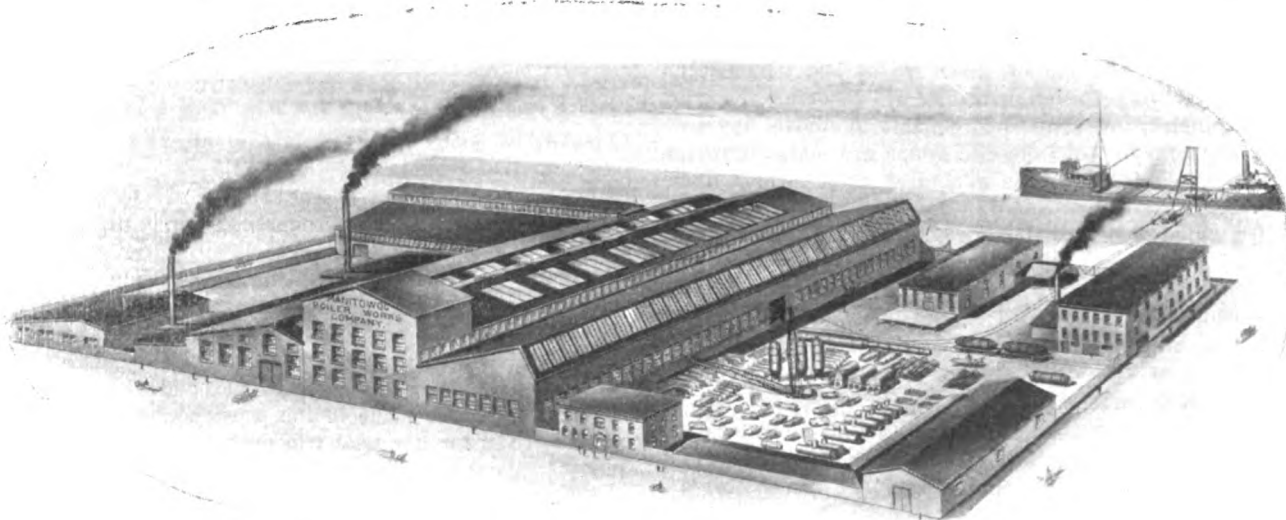
	WOOD						STEEL						TOTAL	
	Sail		Steam		Unrigged		Sail		Steam		Unrigged		No	Gross
	No	Gr's	No	Gross	No	Gross	No	Gross	No	Gross	No	Gr's		
Atlantic and Gulf .....	3	759	67	4,541	18	6,125	2	1,360	6	7,308	1	532	97	20,615
Pacific .....	..	..	51	1,798	20	1,026	..	..	2	312	..	..	73	3,126
Great Lakes .....	1	14	43	798	32	1,106	..	..	4	9,047	1	107	81	11,072
Western Rivers .....	..	..	11	312	3	33	..	..	4	134	..	..	18	479
Total .....	4	773	172	7,449	73	8,290	2	1,360	16	16,801	2	629	269	35,302

The largest steel steam vessels included in these figures are:

Louis R. Davidson, 6,356 tons; built at Ashtabula, Ohio; owned by Yale Transit Co.  
 Evelyn, 3,140 tons; built at Newport News, Va.; owned by A. H. Bull S. S. Co.



The above is taken from a tracing by Ed P. Hough, designing engineer of the new steamer now building at Newport News, Va., for the C. A. Smith Lumber Company. Particular mention was made of this new type of lumber carrier in the May issue of the Pacific Marine Review.



The accompanying illustration is the plant of the Manitowoc Boiler Works Company, Manitowoc, Wis. The Manitowoc Company is situated on the western shore of Lake Michigan, and for years has specialized in the design and construction of Scotch marine boilers. A large number of passenger boats, tugs and freighters on the lakes are equipped with Manitowoc boilers. Several boilers furnished by this company are also in use on the Pacific Coast.

The large plant of the company is hydraulically equipped and has every modern device known for economical boiler construction.

## THE U. S. S. "TEXAS"

## Turbine System Abandoned

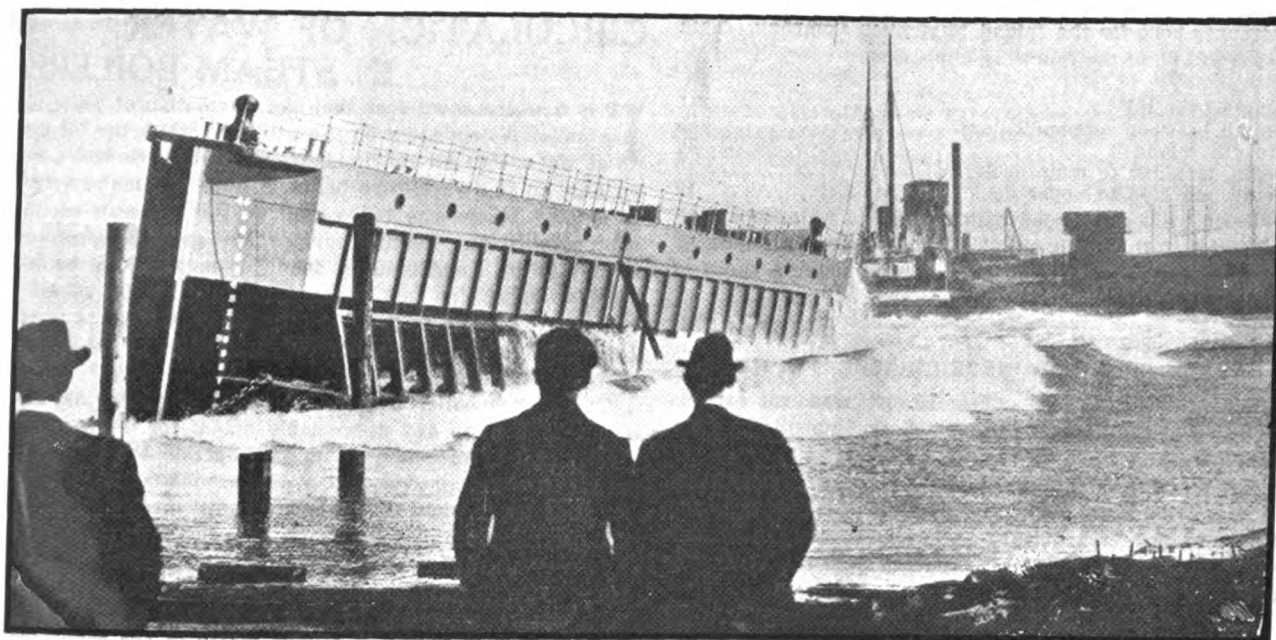
The largest and most powerful battleship in the world, the "Texas" for the United States Navy, was launched at Newport News, Va., on May 18th, 1912. Mr. Meyer, Secretary for the Navy, represented the Government at the launching, President Taft being prevented from attending by his Ohio campaign.

The displacement of the "Texas," with stores aboard, amounts to 28,367 tons; her length is 573 feet, and her speed 21 knots. A remarkable fact is that the 27,000 horsepower required to maintain her speed is developed by twin-screw vertical triple expansion engines of the old type, installed in preference to turbines because of the conviction of U. S. naval engineers that the reciprocating

engine is the most economical and reliable for battleship practice. The "Texas" will, it is said, be the first vessel to carry fourteen-inch guns. She will have ten distributed in five turrets. She will go into commission on December 17. As she emerges from the builder's yard her total cost will have amounted to ten million dollars.

Her sister ship, the "New York," will be launched from the Brooklyn Navy Yard in July.

The lighthouse tender "Armenia" prior to her wreck near Cape Hinchinbrook, Alaska, was engaged in establishing 14 acetylene lights of the flashing type in Alaskan waters. The lights on Ocean Cape and Zaikof Point had been established before the date of the wreck. The establishment of the remainder has been postponed owing to the damage and loss of apparatus.



#### UNION IRON WORKS LAUNCH CAISSON

The caisson for Dry Dock No. 1, U. S. Naval Station, Pearl Harbor, Hawaii, was recently launched by the Union Iron Works, San Francisco.

The principal dimensions of the caisson are as follows:

	Ft.	In.
Length at upper deck .....	126	4½
Width at upper deck and main deck.....	15	0
Width at stringers at offset .....	20	0
Depth .....	43	6
Draught with concrete ballast (no water) .....	24	6
Gross tonnage .....	470	

The bottom and sides of the keel are covered with oak protected with 1-16-inch galvanized iron laid on felt. A rubber gasket is secured to the oak on each side of the keel for making the joint against the seat in the gateway of the dry dock. In placing the caisson in the gateway of the dry dock the compartments are flooded through two 20-inch gate valves located above girder No. 4. In order to remove the caisson from the gateway, the dry dock is flooded through ten 30-inch gate valves located below girder No. 5. All of these gate valves are of the vertical rising stem type and are operated electrically from a common switchboard. Each valve-operating gear is fitted with a clutch which automatically slips when the valve is in the extreme open or shut position. This prevents any overload coming on the motor or undue strain on the mechanism. There is also an indicator in view of the operator to indicate the progress of the valve in opening and closing.

Comparatively little water is required to submerge the caisson, as a minimum draught of 24 ft. 6 in. is maintained by 300 tons of fixed concrete ballast. Trimming tanks are fitted at each end of the caisson to control the trim.

For pumping the caisson out, two vertical spindle centrifugal pumps with a capacity of 7,000 gallons per minute are provided.

Each pump is operated by an independent 40 h. p. vertical motor. The motors are wound for 3-phase, 60-cycle, 220-volt alternating current, built to standard Navy specifications.

The caisson is handled about the docks by means of two electric capstans, one located at each end.

The caisson was launched at 7:30 a. m., April 12th, and left San Francisco, 3 p. m., April 20th, in tow of the tug "Hercules," for Pearl Harbor Naval Station direct.

#### LAUNCHING OF THE STEAMER "SOL DUC"

IN the presence of a large assemblage of steamship officials, representatives of shipbuilding corporations and people prominent in business affairs, the steel steamer "Sol Duc," the most modern vessel of her class ever built on Puget Sound, was successfully sent down the ways at the yards of the Seattle Construction & Dry Dock Company at 4:45 o'clock in the afternoon of May 28th. Miss Alice Joyce, sister of Mrs. Michael Earles, acting as sponsor, christened the vessel "Sol Duc" in honor of the Sol Duc Hot Springs, for which she will cater for tourist travel during the summer months. The new steamer is as near an all-steel vessel as can be built. Practically all of the wood used in her construction is in her handsome interior finishings, which are in cored mahogany. The Inland Navigation Company, owners of the new vessel, are planning on installing on the "Sol Duc" the most luxurious furnishings of any Sound steamer plying out of Seattle.

The dimensions of the "Sol Duc" are as follows:

	Ft.	In.
Length over all .....	205	0
Length between perpendiculars .....	195	0
Breadth over guards .....	34	9
Breadth moulded .....	32	0
Depth, hold .....	12	8
Depth, moulded .....	14	3

She is an oil-burner with a fuel capacity of 1,200 barrels. The vessel is equipped with a triple expansion engine capable of developing 1,500 horsepower. She has two Ballin water tube boilers with a total heating surface of 5,000 square feet, and will be capable of maintaining a speed of sixteen knots per hour.

The yards of the Seattle Construction & Dry Dock Company are busily engaged in the construction of four submarines for the United States Government, two of which are nearing completion. Two other submarines are being built for the Chilean government. The new steel passenger steamer "Sol Duc," built for the Inland Navigation Company, and recently launched will soon be ready for her trial trip. The new steel passenger steamer "Potlatch," also being constructed for the Inland Navigation Company, is progressing rapidly and will be launched in a few weeks. Work has commenced on the new sea-going suction dredge, "Col. P. S. Michie," which is being built for the Government to operate at Coos Bay, Oregon. In addition to the above, the Seattle Construction & Dry Dock Company has just secured a contract for the construction of another steel

passenger boat for the Inland Navigation Company. This vessel will be of the following dimensions:

	Ft.
Length over all .....	221
Length between perpendiculars .....	215
Breadth, moulded .....	30
Depth, moulded to main deck .....	10
Depth, moulded to upper deck .....	17

Which will be equipped with two Ballin water-tube boilers, fitted for burning oil, 3,000-horsepower four-cylinder triple expansion engine, capable of maintaining a speed of 19 knots per hour.

#### LAUNCH OF THE CHINESE CRUISER "FEI HUNG"

The Chinese Cruiser "Fei Hung" was successfully launched at the yard of the New York Shipbuilding Company, in Camden, N. J., on May 25th, 1912.

The Chinese Minister, Chang Yin Tang, accompanied by Mr. Yung Kwai, First Secretary of the Legation, was in attendance with quite a party of Washington officials and a delegation of Chinese students from the University of Pennsylvania.

The "Fei Hung" was christened by Miss Chang Yuyi, the youngest daughter of Minister Chang.

The "Fei Hung," designed as a training ship for Chinese officers and men, is a protected cruiser of the following principal dimensions:

Length between perpendiculars .....	320 feet
Breadth, moulded .....	39 feet
Depth, moulded .....	22 feet 6 inches
Mean draft .....	14 feet
Displacement (about) .....	2,600 tons
Speed (about) .....	20 knots

The hull is divided into numerous compartments by strong water-tight bulkheads and flats. A double bottom extends throughout the machinery space, in which stowage is provided for feed water for the boilers.

The vital parts of the vessel are protected by an armored deck. The coal bunkers are so arranged along the sides of the vessel, both above and below the protective deck as to give a maximum protection from gunfire.

Accommodation is provided for a complement of 232 officers and men.

The two masts are made suitable for taking a wireless telegraph installation of 500 miles range.

There are three boilers of the Thornycroft water-tube express type located in two fire rooms—two in the after and one in the forward fireroom. The latter is fitted for burning oil as well as coal. The total heating surface is about 14,500 square feet and the total grate surface about 271 square feet.

#### NEW STEAMERS CONTEMPLATED BY PACIFIC MAIL STEAMSHIP COMPANY

The Pacific Mail Steamship Company has plans and specifications ready for the construction of four passenger and freight steamers, 680 ft. long, 75 ft. beam, about 37,000 tons displacement on 30-ft. draught, and carrying about 10,000 tons of freight, provision being made for all modern conveniences and luxuries now found on the most advanced type of trans-Atlantic steamers. Bids for these steamers were obtained from various American shipyards the early part of this year, and all preparations had been made for immediately proceeding with the construction of these vessels. However, owing to the legislation now pending before Congress, denying the use of the Panama Canal to American ships in the strictly coastwise or combination coastwise and foreign trade, where such ships are owned, controlled or operated by a corporation in which any trans-continental railroad has any interest, directly or indirectly, contracts for these four ships have been held up.

## CIRCULATION OF WATER IN STEAM BOILERS

It is a well known fact that the circulation of water in a boiler is dependent on the extent to which the volume of water can be sub-divided. In the Scotch boiler, as opposed to the water-tube boiler, a large volume of water is located below the tubes and as this water is not in contact with any heating surface, the greater proportion of it may be considered as dead. If means could be devised to sub-divide this water space into smaller volumes in such a way as to provide circulation, the efficiency of the boiler, as well as other characteristics of the boiler, would be improved.

The Scotch boiler with its universal popularity has not been modified to any appreciable extent for the last fifty years, and at the time of its introduction the matter of circulation was an unknown or disregarded factor. In fact, its importance was not appreciated until the high pressure age began about thirty years ago. It is the basic principle in all water-tube boilers, but this has not been utilized in other types of boilers to any extent, probably for the reason that it is almost impossible to produce in shell boilers by any means the circulation of all the water in one continuous round, such as marks the well constructed water-tube boiler.

We are indebted to the E. T. Copeland Co., Inc., 100 William St., New York, for a description of their method of improving the circulation of water in the Scotch boiler, but before considering it let us take up the elementary principles of circulation.

With this object in view the following is quoted from a lecture delivered by George H. Babcock, at Cornell University, in 1890:

#### Circulation of Water in Steam Boilers

"You have all noticed a kettle of water boiling over the fire, the fluid rising somewhat tumultuously around the edges of the vessel, and tumbling toward the center, where it descends. Similar currents are in action while the water is simply being heated but they are not perceptible unless there are floating particles in the liquid. These currents are caused by the joint action of the added temperature and two or more qualities which the water possesses.

"1. Water, in common with most other substances, expands when heated; a statement, however, strictly true only when referred to a temperature above 39° F or 4° C., but as in the making of steam we rarely have to do with temperatures so low as that, we may, for our present purposes, ignore that exception.

"2. Water is practically a non-conductor of heat, though not entirely so. If ice-cold water was kept boiling at the surface the heat would not penetrate sufficiently to begin melting ice at a depth of three inches in less than about two hours. As, therefore, the heated water cannot impart its heat to its neighboring particles, it remains expanded and rises by its levity, while colder portions come to be heated in turn, thus setting up currents in the fluid.

"Now, when all the water has been heated to the boiling point corresponding to the pressure to which it is subjected, each added unit of heat converts a portion, about seven grains in weight, into vapor, greatly increasing its volume; and the mingled steam and water rises more rapidly still, producing ebullition such as we have noticed in the kettle. So long as the quantity of heat added to the contents of the kettle continues practically constant, the conditions remain similar to those we noticed at first, a tumultuous lifting of the water around the edges, flowing toward the center and thence downward; if, however, the fire be quickened, the upward currents interfere with the downward and the kettle boils over.

"If now we put in the kettle a vessel somewhat smaller with a hole in the bottom and supported at a proper distance from the side so as to separate the upward from the downward currents, we can force the fires to a very much greater extent without causing the kettle to boil over, and when we place a deflecting plate so as to guide the rising column toward the center it will be almost impossible to produce that effect. It divides the currents so that they will not interfere each with the other.

"But what is the object of facilitating the circulation of water in boilers? Why may we not safely leave this to



the unassisted action of nature as we do in culinary operations? We may, if we do not care for the three most important aims in steam-boiler construction; namely, efficiency, durability, and safety, each of which is more or less dependent upon a proper circulation of the water. As for efficiency, we have seen one proof in our kettle. When we provided means to preserve the circulation, we found that we could carry a hotter fire and boil away the water much more rapidly than before. It is the same in a steam boiler. And we also noticed that when there was nothing but the unassisted circulation, the rising steam carried away so much water in the form of foam that the kettle boiled over, but when the currents were separated and an unimpeded circuit was established, this ceased, and a much larger supply of steam was delivered in a comparatively dry state. Thus circulation increases the efficiency in two ways: It adds to the ability to take up the heat, and decreases the liability to waste that heat by what is technically known as priming. There is yet another way in which, incidentally, circulation increases efficiency of surface, and that is by preventing in a greater or less degree the formation of deposits thereon. Most waters contain some impurity which, when the water is evaporated, remains to incrust the surface of the vessel. This incrustation becomes very serious sometimes, so much as to almost entirely prevent the transmission of heat from the metal to the water. It is said that an incrustation of only  $\frac{1}{8}$  inch will cause a loss of 25 per cent in efficiency, and that is probably within the truth in many cases. Circulation of water will not prevent incrustation altogether, but it lessens the amount in all waters, and almost entirely so in some, thus adding greatly to the efficiency of the surface.

"The experiment with our kettle gives the clue to the best means of promoting circulation in ordinary shell boilers, but it is almost impossible to produce in shell boilers, by any means, the circulation of all the water in one continuous round, such as marks the well-constructed water-tube boiler.

"A second advantage to be obtained through circulation is durability of the boiler. This it secures mainly by keeping all parts at a nearly uniform temperature. The way to secure the greatest freedom from unequal strains in a boiler is to provide for such a circulation of the water as will insure the same temperature in all parts.

"3. Safety follows in the wake of durability, because a boiler which is not subject to unequal strains of expansion and contraction is not only less liable to ordinary repairs, but also to rupture and disastrous explosion. By far the most prolific cause of explosion is this same strain from unequal expansions.

"Having thus briefly looked at the advantages of circulation of water in steam boilers, let us see what are the best means of securing it under the most efficient conditions. We have seen in our kettle that one essential point was that the currents should be kept from interfering with each other. If we could look into an ordinary return tubular boiler when steaming, we should see a curious commotion of currents rushing hither and thither, and shifting continually as one or the other contending force gained a momentary master. The principal upward current would be found at the two ends, one over the fire and the other over the first foot or so of the tubes. Between these, the downward currents struggle against the rising currents of steam and water. At a sudden demand for steam, or on the lifting of the safety valve, the pressure being slightly reduced, the water jumps up in jets at every portion of the surface, being lifted by the sudden generation of steam throughout the body of water. You have seen the effect of this sudden generation of steam in the well-known experiment with a Florence flask, to which a cold application is made while boiling water under pressure is within. You have also witnessed the geyser-like action when water is boiled in a test tube held vertically over a lamp.

"If now we take a U tube depending from a vessel of water and apply the lamp to one leg, a circulation is at once set up within it, and no such spasmodic action can be produced. This U tube is the representative of the true method of circulation within a boiler properly constructed. In such a construction the circulation is a function of the difference in density of the two columns. Its velocity is measured by the well-known Torricellian formula,  $V = \sqrt{2gh}$ , or approximately,  $V = 8\sqrt{h}$ ,  $h$  being measured in terms of the lighter fluid. This velocity will increase until the rising column becomes all steam, but the quantity of weight circulated will attain a maximum when the density of the mingled steam and water in the rising column becomes one-half that of the solid water in the descending column.

"As I have before remarked, provision for a proper cir-

ulation of water has been almost universally ignored in designing steam boilers, sometimes to the great damage of the owner, but oftener to the jeopardy of the lives of those who are employed to run them. The noted case of the Montana and her sister ship, where some \$300,000 was thrown away in trying an experiment which a proper consideration of this subject would have avoided, is a case in point; but who shall count the cost of life and treasure not, perhaps, directly traceable to, but, nevertheless, due entirely to such neglect in design and construction of the thousands of boilers in which this necessary element has been ignored?"

#### Scotch Boilers

Everybody familiar with marine engineering is aware that Scotch boilers have been for upwards of fifty years the standard of excellence for marine duty as steam generators. In the days of low pressure they acquired fame for efficiency and trustworthiness; with the development of the age of steel, they have led the procession in making high pressures available, with safety; and today they are the source of power in a large proportion of the steamships on the face of the earth.

Briefly described, the Scotch Boiler is a horizontal, internal-furnace, return-tubular boiler, complete in itself, and constructed entirely of steel.

The products of combustion pass from the furnaces to a combustion chamber in the rear, of suitable proportions to allow the gases to thoroughly intermix, and then return through a multitude of submerged tubes of small diameter to the front, where the unconsumed gases are discharged to the chimney, or smoke-stack.

When designed for marine service, the combustion chamber is made of steel plates, so constructed and placed that it is entirely encompassed with water. This is called a "water back."

When designed for stationary service, it is customary to dispense with the "water back," and to substitute a "dry back." In other words, the shell is extended, a removable head bolted on, and the interior of the extension is lined with fire brick, set in fire clay, and made air tight.

They are widely known as Horizontal, Internal-furnace, Return-tubular Boilers.

Although boilers of the Scotch and Horizontal, Internal-furnace, Return-tubular types embody many of the qualities essential to perfection in boilers, and are justly entitled to high standing and esteem in the market, they are, as hitherto designed and built, subject to one adverse criticism.

Ask any mechanical engineer or operating engineer, if the Scotch boiler is perfect as it stands today, and the answer will probably be, "Well, not quite perfect, but almost."

Ask for an explanation of this qualified approval, and he will inform you that its lacking quality is that of natural circulation of its water contents; that it does not embody any structural element, device, method, or system, designed to cause the water to follow a cycle of travel over its heating surfaces, naturally and automatically.

Those of us who have to do with the maintenance of Scotch boilers know what a continual round of expensive repairs have to be made at nearly every inspection, and in almost every case the causes are due to straining because of unequal expansion. There are Scotch boilers running at a working pressure of 150 pounds, upon the bottom of the shell of which the bare hand may be placed without any inconvenience.

Unequal temperatures between the upper and nether part of the boiler subject joints and rivets to severe strains and movements which cause leakage and corrosion, and necessitate constant attention and repairs.

Eliminate these faults and the Scotch boiler will be as nearly perfect as any boiler can be.

Furthermore a practical automatic circulating system will make it needless when getting up steam to waste coal



and time with a slow fire; that it will be possible to start the fire and push it along to pressure point, without nursing, and without fear or danger of injury by reason of unequal expansion.

The following will explain how it happens that the fault referred to exists:

These boilers contain either one, two, three, or four cylindrical furnaces; the number employed and the arrangement thereof being governed either by the horsepower capacity wanted, and the area of grate necessary, or the floor space to be occupied by the unit.

These furnaces are located within the shell in various ways: all below the center line.

Taking a single furnace boiler as an example, the furnace is located eccentrically of the shell and near the bottom thereof, the products of combustion passing from the rear of the furnace through tubes arranged above the upper half of the furnace.

This arrangement necessarily leaves a large space below the lower half of the furnace to be occupied by water removed from the direct action of the fire. We will call this dead water. The water which occupies the space in which the heating surfaces are active, we will call live water.

The total quantity of water contained in a standard single furnace boiler rated 150 h. p. is almost exactly 21,000 pounds. Of this 14,000 pounds is live water and 7,000 pounds dead water.

The total quantity of water contained in a standard two-furnace boiler rated 200 h. p. is 32,000 pounds. Of this 22,000 pounds is live and 10,000 pounds dead.

It will be observed that practically one-third of the total water charge is dead. Its normal temperature is low as compared with that prevailing in the live water when the boiler is in action.

Owing to the difference in temperatures and consequently the densities of the live and dead waters, they will remain, under ordinary conditions, distinctly separate and independent bodies.

The upper body of rarefied live water cannot naturally descend, and the lower body of heavier dead water cannot naturally rise; hence there is no natural admixture of the respective parts.

In consequence, therefore, of structural characteristics, a very large percentage of the water contents of the boiler is pocketed in an over-capacious mud drum, rendered inert

and useless, allowed to become practically cold, and to affect adversely the every day duty and life of the boiler.

#### Circulating Devices

It has been stated that circulation in boilers is either natural or artificial; and that, when natural, the water is carried over the heating surfaces in regular sequences; when artificial, it is forced in contact with the heating surfaces by pumps, or their equivalent.

When boiler troubles occur, and are traced to their root, and found to be due to the lack of circulation, it is common practice to resort to mechanical appliances with view to overcoming the difficulty, or correcting the fault, and obtaining desired results by force.

Various methods are adopted. As a rule, pumps or injectors are set in motion.

The injection of a pound of heated feed water simply displaces an equal quantity at the place of introduction. It restores the quantity evaporated and maintains the water level. It does not cause any effect equivalent to circulation.

The transference of a quantity of water from one part of a boiler where it is naturally cool, or cold, to another part of the boiler, where it is hot, does not accomplish anything akin to circulation.

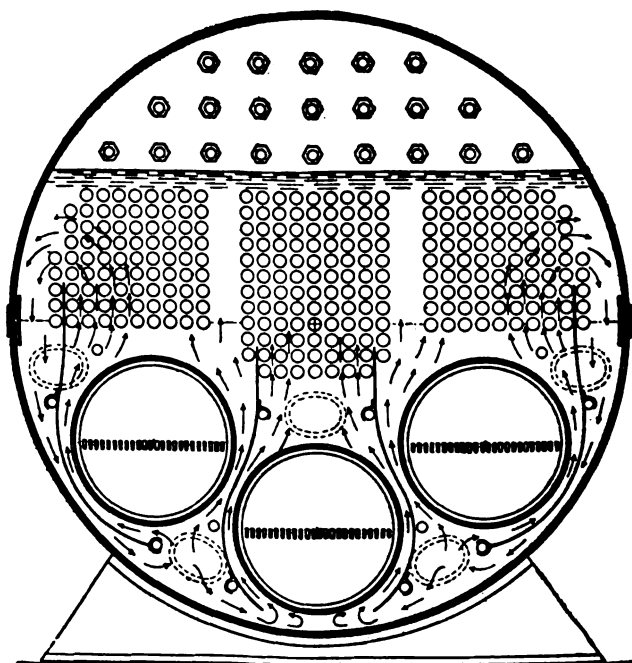
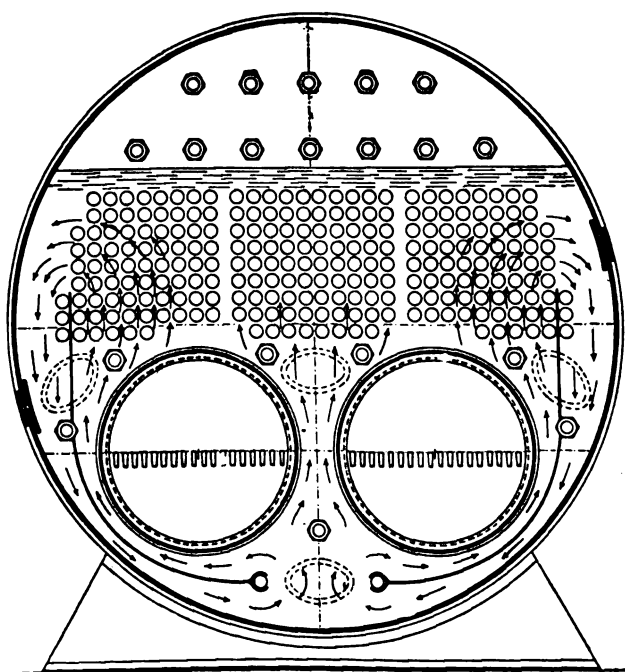
The exchange of waters is necessarily a mechanical operation, by means of a pump, or equivalent, via pipe connections. The cold water subtracted thereby is replaced by the subsidence, or gradual sinking, of an equal volume of heated water. The movement is local, and too slow to be mistaken for circulation.

Its function is fulfilled when it has accomplished the substitution of hot water for cold, and thus partially equalized the temperature in a section removed from the direct action of the fire.

Work performed by these instrumentalities does not contribute in the slightest degree to the evaporative efficiency of a boiler, or to the increase of its capacity.

If you pump hot water into a pool you can change its temperature, increase its volume, and raise its level. This is all that can be accomplished by injecting hot water into the bottom section of a Scotch boiler. It is far from being circulation.

Mechanical assistance involves expense in operation; watchful care on the part of attendants; and does not cause the general movement of the water contents of a boiler, which is essential to true circulation.



To be effective, circulation must be general and automatic. It must involve in continuous movement the entire body of water which the boiler contains. It must be due to the influence of heat so applied that the water will be caused to travel over the heating surfaces, as it follows the lines of least resistance on its course to the disengaging space, or reservoir provided for the accumulation of steam. The impelling cause of its travel must be the difference in density due to temperature; it cannot otherwise be natural or automatic.

The water must be given a cycle of travel; it requires distinct and separate paths for movement upward and downward.

The movement will facilitate the process of evaporation, transmission to the water surface, and liberation of steam.

To be properly efficient the system must be such that the surfaces of the metal separating fire and water shall be scrubbed, the one with hot gases and the other with circulating water. It is obvious that circumferential movement of the water over the tubular surfaces will accomplish better results than longitudinal movement possibly can.

With circulation automatic and completely established it is evident that one and the same temperature will prevail throughout the structure; and that injurious effects due to unequal temperatures cannot occur. Consequently it reduces the annual cost of maintenance, and adds years to the life of the boiler.

The Copeland system referred to above consists of two rectangular plates of steel or other metal of such length as to extend from head to head of the boiler and of such width that when in position they will extend above and below the grate level or fire line. They are erected edgewise upon suitable means of support located below the grate line.

The plates are curved to correspond approximately with the radius of the furnace. They are designed to reach from a point near the center of the bottom of the boiler to an indeterminate point above the bottom course of fire tubes. The method of supporting the plates is shown in the diagrams as well as the resulting circulation.

The tubes at the bottom of the plates support them and incidentally supply hot air to the combustion chamber. These tubes are inserted and expanded in the heads in the usual manner, no bolts, rivets or other fastenings being employed.

When properly placed each plate becomes a partition

which sub-divides the space between the furnace and the shell, so that a definite and undisputed pathway is provided for an uprising current on the inside, and a down flowing current on the outside. Its interposition permits the water to move in diverse directions without conflict; and the respective influences of heat and gravity force it to follow a certain course, and to make a complete circuit. It is obvious that the water contained between the plate and furnace, adjacent to the fire, will be directly and continuously heated, and its density thereby reduced. It will, therefore, naturally rise and be coincidentally followed by water from below. This is the starting point of the uprising current above mentioned.

On the other hand, the water in the space between the plate and the shell, being out of touch with heating surfaces, and also in contact with the shell, loses, rather than gains, heat, and its density is consequently increased. It therefore follows the law of gravitation and naturally descends, via the pathway provided for its transit, to the bottom of the boiler, where it turns the foot of the division plate, and meets the demand of the uptake for a constant supply of water for re-submission to the heating surfaces.

It establishes and maintains natural and complete circulation throughout the boiler; beginning immediately upon starting fires, and operating automatically and continuously until the fire is extinguished.

It increases horsepower capacity by causing the entire water contents of the boiler to travel over the heating surfaces.

The movement includes the water below the grate line, as well as that above it.

In proportion to the entire water charge, the quantity carried below the grate line averages one-third of the total.

This, being beyond the influence of the fire, is ordinarily cold, stagnant and useless.

It compels this large body of inert water to move up and traverse the heating surfaces, absorb heat, and become steam in common with the water carried between the grate line and the water line.

Thus the entire water charge (instead of only two-thirds of it) becomes efficient as a source of steam supply.

This means that a boiler with the circulator is capable of delivering one-third more power than it would be competent to deliver without it.

It also improves the boiler efficiency by equalizing the temperatures of water and steam, and improves the combustion.

PITCH TABLE SHOWING KNOTS PER HOUR FOR CORRESPONDING PITCH IN FEET

Mr. L. Heynemann, consulting engineer of San Francisco, representing the Goldsmith-Thermit Company on this coast, and who contributed to the Pacific Marine Review's April issue the interesting article on "Profit and Losses of

Large Steamers," recently called at this office and presented the writer with the subjoined table, which he compiled and which unquestionably will be of value to those interested.—Ed. Note.

	0	1	2	3	4	5	6	7	8	9
10	.0986842	.108552	.118421	.128289	.138158	.148026	.157894	.167763	.177631	.187500
20	.1973684	.207237	.217105	.226974	.236842	.246711	.256579	.266447	.276316	.286184
30	.2960526	.305921	.315789	.325658	.335526	.345395	.355263	.365132	.375000	.384868
40	.3947368	.404605	.414474	.424342	.434210	.444079	.453947	.463816	.473684	.483553
50	.4934210	.503289	.513158	.523026	.532895	.542763	.552632	.562500	.572368	.582237
60	.5921052	.601974	.611842	.621710	.631579	.641447	.651316	.661184	.671053	.680921
70	.6907894	.700658	.710526	.720395	.730263	.740132	.750000	.759868	.769737	.779605
80	.7894736	.799342	.809210	.819079	.828947	.838816	.848684	.858553	.868421	.878289
90	.8881578	.898026	.907895	.917763	.927631	.937500	.947368	.957237	.967105	.976974
100	.9868420	.996710	1.006579	1.016447	1.026316	1.036184	1.046053	1.055921	1.065789	1.075658

Example No. 1—

Pitch 7.63 94 revolutions  
7.63x94=717.22 ft. per minute  
From table:  
700.00 = 6.90789  
10.00 = 0.09868  
7.00 = 0.06907  
0.22 = 0.00217  
7.97782 knots

Example No. 2—

Pitch 22.25 100 revolutions  
22.25x100= 2225 ft. per minute  
From table:  
2200 = 21.7105  
25 = 0.2467  
21.9572

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## THE CALM THAT FOLLOWS THE STORM

**L**ET us be thankful! The Senatorial investigation into the "Titanic" disaster has mercifully ended, but not without belittling to no small extent the prestige of the United States Senate, both at home and abroad, due to the unpardonable ignorance of the chairman of the investigating committee regarding important maritime matters, provoking during and after the inquiry derisive comments from marine circles all over the globe, to the painful regret of our country in general and to our Coast states in particular.

The landsmen from inland states, consisting of men somewhat conspicuously opposed to the interests of an American merchant marine, partly constituted the committee conducting this investigation and blundered pitifully. They were not even amateurs in regards to professional seamanship. It was at first hoped that this investigation, an inquiry into the disaster to a foreign ship, would meet with desirable results, not only attracting the ear, but rivetting the understanding of the nautical reader, and which, if professionally conducted, would necessarily have created paramount mental impressions of a useful and lasting kind, thereby awakening and sustaining an interest on so vital a subject.

While it may be stated in all humility that this investigation has not proved wholly useless, it has by no means enhanced the dignity of our country, as one possessing the largest individual coast line of any in the world.

Why we neglected to choose men from our coast states familiar with maritime affairs is a question which we leave for Washington to answer.

The Pacific Marine Review can but sympathize with the head of the White Star Line, no small an authority in the world's shipping, who must have been bored as an ardent listener as well as a witness confronted with questions, some of which were shrined in the hallow of ridicule.

In relation to the uncalled for public censor of Mr. Ismay, from which, and regrettably so, even an eminent naval writer has not refrained, practically declaring that Mr. Ismay would go through life "branded with the mark of Cain," I absolutely fail to see the cause for such assertions, because, after Mr. Ismay, who was merely a passenger, had done his best to save others, he committed the crime of saving himself. In other words, he refused to commit suicide as a sort of melo-dramatic atonement for being on board of his ship when she was wrecked.

If this doctrine be carried to its logical conclusion, all

the directors of the White Star Line should commit suicide in a body. I am not sure but what the censors would expect the builders of the "Titanic" to do likewise, and if everybody responsible for the disaster in any way is expected to die in expiation of it, why not include the Board of Trade?

I am still wondering how many of Mr. Ismay's censors would have taken a different view if they had been in his place.

Such doctrine of apologizing for being alive appears to me, to say the least, devilish. Sea heroism is at times carried to extremes. Have we the right to exact from the commander of a ship a sacrifice more than we exact from any other public servant? When a skipper has done all in his power to save the lives of others, he should, as the last man leaving his ship, at least be allowed to save his own, if possible. But many of the censors ashore forbid him to leave the ship at all, as in many other instances it has been openly declared that the captain should have died with his doomed charge, regardless of those depending on his support ashore, even in some cases where no lives were lost.

We have the Department of Commerce and Labor, headed by its secretary, under whose supervision is the steamboat inspection service, in charge of the supervising inspector general. A complete change is necessary before even this service becomes justly fit to hold inquiries of such importance as the one with which the investigating committee was so suddenly confronted. I trust that the time may not be far distant when the position of a secretary of marine will be created, a choice being made, if possible, from the profession of naval architects of the merchant marine, who should not only be assisted by tried and experienced admiralty judges, who naturally have the acquaintance with the sea which is necessary, but by tried and experienced seamen of the merchant marine. Then, and only then, will all matters pertaining to the merchant marine be professionally dealt with in a proper and efficient way. If master mariners could have their voice in these matters I feel assured that our vessels would have long since been practically and efficiently equipped.

One of the Pacific Marine Review's contributing marine insurance writers, on whose articles "Fairplay" has frequently and favorably commented, said in his article published in our May issue, under the heading of "The Loss of the Titanic": "One does not go to a lawyer to be treated for illness, nor to a doctor to get legal advice." How true! Thus why should all matters pertaining to navigation in the United States be placed in the hands of landsmen or the supervising inspector general and supervising inspectors, many of whom are marine engineers. If these gentlemen are considered officially efficient to investigate and render decisions, without the assistance of the trained, professional and judicious mind, in maritime cases, could we for one moment consider them efficient for handling and navigating our vessels across inland waters, oceans and around the globe?

The legion of suggestions for the prevention of repetitive sea tragedies, caused by the "Titanic" disaster, is to the appreciative, professional mind more than a perplexing problem. The difference of opinion is manifold, in particular of those not initiated in merchant marine affairs, including officers of the navy, whose training is accomplished on an entirely different line, and some of their suggestions, to say the least, have reached the stage of ridicule and absolute uselessness for future improvement of conditions in the merchant marine.

While remedial legislation in maritime law has long ago become essential and has far from kept apace with the strides made in ocean traffic, we are again suddenly confronted with its utter inadequacy, and instead

of considering it calmly and arriving at solutions in sober judgment, beneficial to all, we headlong make new rules requiring boatage to accommodate every passenger on board, even in trades not hampered by ice at any time in the year and on vessels some of which truly belong to times long past both in age as well as in construction, without going into detail and creating superior conditions for the successful launching of boats in case of emergency.

Relative to the different views recently expressed on navigation in ice regions, which, during the present season, has extended much further south than has been experienced since and in 1890, which was considered an exceptional year, I am surprised that the very able editor of our highly esteemed contemporary "Fairplay," in the issue of April 18th, should state, with reference to the "Titanic" disaster: "What occurs to me is that it was, to say the least, risky to be traveling at a dangerous speed, as she must have been doing by the time she had made in the neighborhood of ice, which would have been indicated by the thermometer," etc. The writer's own experience in the trans-Atlantic trade has taught him different, and is fully sustained by no less an eminence than the author of "Wrinkles in Practical Navigation," Capt. S. T. S. Lecky, R. N. R., whose splendid work proves Fairplay's assertion to be incorrect.

#### Approach to Ice Not Indicated by Water Temperature

"It is a popular delusion among passengers on board ship that by taking the temperature of the water at short intervals, the approach to ice is unfailingly indicated. Unfortunately, such is by no means the fact, and it is time the idea was exploded. More than ordinarily cold water merely shows that the ship is in a part of the ocean where ice may possibly be encountered and not that it is actually present. The well-known Labrador Current, for example, is a cold stream flowing from Polar regions, and carrying with it, during spring and summer, enormous quantities of field ice and bergs, which come down from Davis Strait. It is not the extra Polar ice, however, which causes the cold current, although it is the cold current which brings down the ice; consequently, the experienced navigators of the North Atlantic know full well when the water temperature falls to the eastward of the banks, that it is necessary to be on guard against the possibility or probability of meeting ice, according to the time of year. By kind permission, and on the unexceptional authority of Captains Ballantine, Dutton and Smith, of the Allan Mail Steamship Line, all men of high standing in the profession, and well acquainted with ice navigation, it is here stated that no appreciable difference in the temperature of the water is caused by the proximity of even the largest icebergs, and when one considers what a poor conductor of heat water is their statement can be well believed."

This is fully corroborated by the experience of Captain G. M. Lourison, of the ship "Eaton Hall," who, in March, 1893, fell in with quite a number of very large bergs in lat. 49° S., and long. 52° W. Though close to, the bergs caused no effect whatever.

In conformity with what is known as the law of convection, water will transmit heat readily enough in a vertical direction. Thus, when the liquid in the bottom of a vessel is warmed by fire it becomes specifically lighter, and accordingly arises and makes room for the colder surface water to flow down and fill its place; this cold water gets heated in turn and so continually ascending and descending currents are created, until the temperature of every part alike is raised to the boiling point. The propagation of heat in a lateral direction does not take place in this matter at all. Heat spreads sideways in water by conduction alone, a process which involves no transference of the particles, and is very slow indeed as compared with the other.

To revert to the thermometer as a means of detecting the presence of ice by a fall in the water, Lord Kelvin says: "The conducting power of water is so small that there would be absolutely no cooling effect by conduction to a distance from an iceberg, but there might be a considerable effect by the cold and light fresh water running down from the iceberg and spreading far and wide over the surface of the sea."

This seems a reasonable supposition, but it is more than likely that the film of cold fresh water would be broken up by the agitation of the wind and waves, and, in any case, disturbed and turned over by the plough-like action of a vessel's bow going at speed. Under these circumstances the hydrometer would be no better than the thermometer.

Again, it is well known that, about the banks, the Labrador Current is sometimes colder when no ice is to be seen than it is when the contrary is the case. In winter it even falls to 30 degrees Fahr. Large icebergs have been actually passed at a distance of a quarter of a mile, and the water temperature carefully tested, without finding a single degree of difference from what previously existed when there were none in sight. It may be fairly assumed, therefore, that no reliance is to be placed upon the thermometer as an immediate or direct means of detecting the presence of ice, especially when it takes the form of stray bergs. In fog it simply tells you when the ship has entered the ice-bearing current or region and that is all."

The above has only recently, on April 26th, been substantiated by the writer's old shipmate, Captain Barman of the Red Star Line S. S. "Finland," which passed an iceberg about 600 feet long, 80 feet high, extending no doubt hundreds of feet below the water, in lat. 41° 27' N. and long. 46° 07' W., and nine icebergs of various sizes between lat. 41° 28' N., long. 46° 07' W., and lat. 40° 58' N. and long. 46° 42' W. Captain Barman states that the temperature of the water in the vicinity where the "Titanic" sunk on April 15th, taken twelve miles distance from the first iceberg sighted, registered 42 degrees, and at one mile distance the temperature of the water was identically the same, but when seven miles distance from another iceberg the temperature registered 58 degrees and at one mile distance from the same berg again a temperature of 58 degrees was obtained. Tests of temperature made the following day, without any ice in sight, showed 34 degrees.

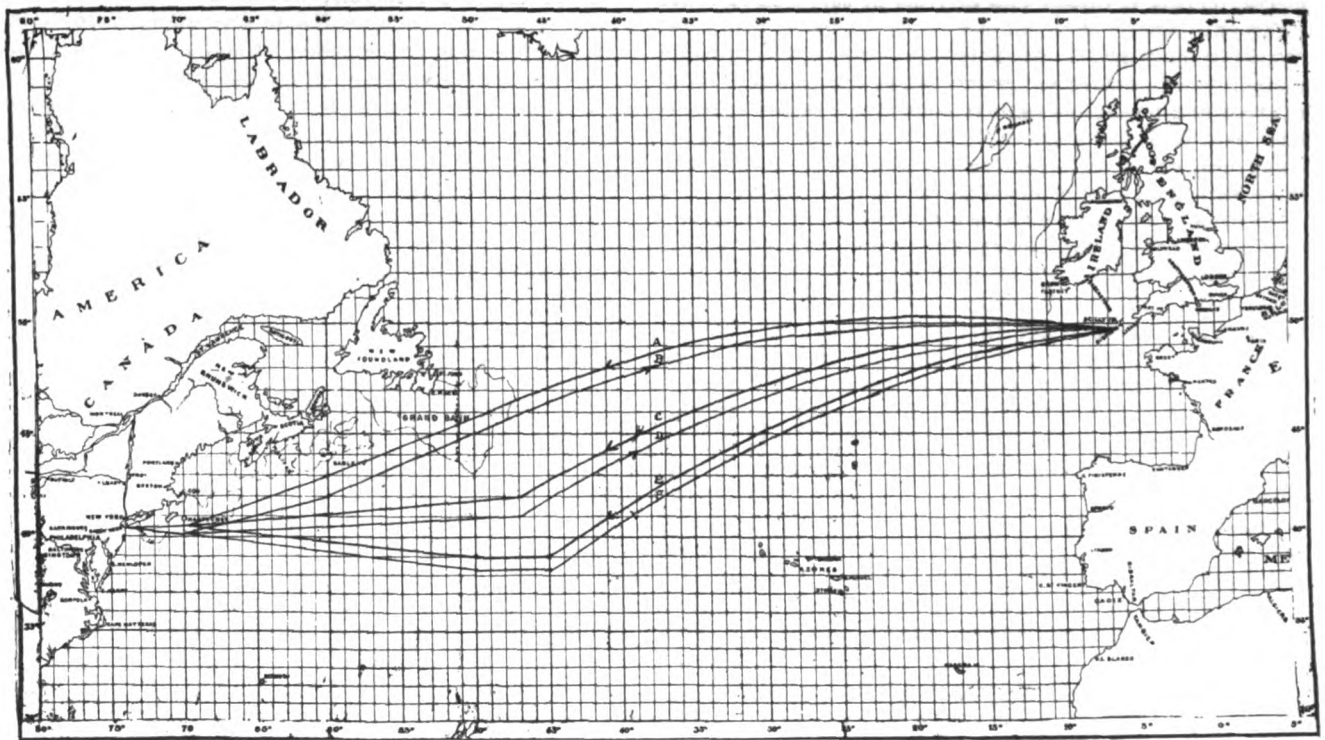
Fully familiar with the excellent and precise routine work as bridge officer and master, during my service on some of the International Mercantile Marine Company's vessels, in the trans-Atlantic service, I do not hesitate in assuming that the temperature of the water was taken on board the S. S. "Titanic" at least every half hour on this fateful, although clear, calm night, owing to the reports received by wireless of icebergs northwest of the track, and if the temperature had suddenly changed other precautions would undoubtedly have been taken. However, a change of temperature of water would not necessarily indicate the vicinity of ice. It was the berg sighted too late which the "Titanic" struck in the only possible way which could sink her. On account of the presence of ice in the adopted tracks of the North Atlantic, all steamship lines have jointly agreed upon the following changes in the trans-Atlantic route, which went into effect May 11, 1912, and of which the accompanying chart, a reproduction from the original, for which I am indebted to the office of Mr. P. A. S. Franklin, vice-president of the International Mercantile Marine Company, shows the former and present west and east bound tracks.

West bound: "Great circle to lat. 39° N., long. 45° W., thence to lat. 39° N. and long. 50° W."

East bound: "To lat. 38° 20' N., long. 50° W., thence to lat. 38° 20' N. and long. 45° W., thence the great circle."

The above is, in the writer's opinion, indeed the best





- A. Winter Westbound Track.  
 B. Winter Eastbound Track.  
 C. Summer Westbound Track.  
 D. Summer Eastbound Track.  
 E. New Summer Westbound Track.  
 F. New Summer Eastbound Track.

} Agreed Upon and in Force Since May 11th, 1912.

safeguard in future ocean travel over this route, and might dispel the hallucination of building ships to withstand collision with icebergs and obviate future loss of life in ice regions.

Regarding the future changes contemplated in hull construction of passenger steamships, to bring these vessels somewhat nearer the mark of absolute safety, it is not likely that many new features will be adopted. It now seems, however, that we will go back to what was done in years gone by, namely, extend athwart-ship bulkheads substantially constructed and sufficient in number, according to the length and tonnage of the vessel, from the top of the ballast tank through the lower decks to at least two decks above the water line, which would be the main deck in any large vessel, all decks to be perfectly watertight. The extension to the upper deck of the ship's hull proper is in a merchant vessel uncalled for. If this old, but unquestionably more efficient, method is adhered to in future times, a feature which heretofore has not been in vogue may become of considerable importance, and which lies in connection with the present system of hatches, in the lower hold, or lop deck and lower 'tween decks; in fact, of every deck below the water line of a fully laden vessel.

For these hatch openings, it will be essential to call into existence a device to close hatches watertight, with a cover of sufficient strength and secure fastenings to withstand the water pressure of any of these lower holds filled with water during an accident and to prevent the flooding of the hold above or below the one injured.

This likewise refers to the ventilating system, naturally extending through the many decks.

Longitudinal bulkheads, carried at least to the deck above the waterline, are essential throughout the entire length of the boiler rooms on each side of the vessel, built to withstand any ordinary water pressure, and this space between the longitudinal bulkheads and the ship's side to be used as bunker space should be subdivided by transverse water tight bulkheads in each boiler compartment as already introduced in the Cunard Line's S. S. "Mauretania"

and "Lusitania" and the new Hamburg-American Liner "Imperator," recently launched, which, without a doubt, is the safer, stronger and saner construction for future huge liners of this class, providing that the wing bulkhead rises to a deck higher than in the "Mauretania's" after boiler room. The ship's side of the engine room, built on the Isherwood system with incased frames, the inner shell of sufficiently staunch material to again withstand the water pressure, if the outer skin is pierced, should bring any vessel nearer the mark of the so much desired certain safety, which, however, can never be obtained as long as nature confronts us with unprecedented obstacles.

The design of the upper structure, however, is where the changes will principally be made, in connection with life saving and boat equipment in general, which touches the most important problem confronting us.

If the traveling public continues to desire extravagance on ocean voyages, and there is no reason why they should not, I cannot see that this luxury would interfere with the fullest and most perfected life-saving appliances being placed on any palace afloat.

It might herewith be mentioned that the ever-increasing luxury for first and second class passengers has long ago driven the old-time repulsive expression "steerage" into the past on most of the ocean passenger steamers, and the strides made for the third class have kept fully apace with those made for the exclusive set. The third class has its separately divided cabins and bathrooms, smoking rooms and ladies' room, with a piano, and the dining rooms with revolving chairs, where meals are served on cleanly covered tables. The former unpleasantness of travel in this class has vanished, never to return.

In the future the boat deck will become the boatdeck proper, with easy access during disaster to all classes of passengers the ship may carry, not only with boatage enough to provide for all, but with improved appliances to handle boats quickly for launching purposes operated either by electricity or steam, to which appliance the power is supplied from either one boiler space in a hull

constructed as previously outlined. The swinging in and out of the boats may be done automatically with absolute safety, as well as the releasing of falls both fore and aft simultaneously the minute the boat reaches the surface of the water.

The difficulty of safely lowering boats in bad weather may be overcome by a guide attachment, half way between the top of the boat deck and water line on the ship's side, which would be made much easier if we discarded the boat tackles, in the future most likely replaced by single or double wire falls, working from special drums of winches. The Welin Quadrant Davit is splendidly adapted for this purpose and will always remain an important factor to reckon with.

The equipment of such improved devices will minimize the number of men now required for launching boats, in each of which a reliable coxswain should be placed in charge, with at least two sailor oarsmen to keep steerage way in the boat and to keep the boat's head to the sea in rough weather. Other oarsmen could be supplied from both the steward's and engine department, in the former of which I have frequently found splendid material for reliable men in cases of emergency. An encouragement in the shape of a bonus should be allowed for those interested in these departments, in particular to men who have proven themselves capable during boat drill in port to handle oars satisfactorily. When signing articles the question, "Can you handle a boat's oar?" may well be adopted, immaterial whether sailor, fireman or steward.

The floating off pontoons, which has been suggested, as part of the ship under ordinary circumstances, destined for life-saving appliances, designs of which have of late adorned many of our weekly papers, would give, in my opinion, good material for fiction writers, interesting to our boys, as the weird tales of the sea charmed many of us in younger days.

If one of these pontoons, naturally and essentially built of light structure, should successfully float off a sinking ship it would readily become, during a rough sea, another disaster in shape of a sunken pontoon with hundreds of people struggling for life. Notwithstanding the fact that on board of any ship in a seaway, the upper structure always works to some extent, and in heavy weather more so, such a fictitious appliance would be a continuous case of serious corrosion and deterioration to the pontoon, as well as to the part of the ship to which this menace would be fastened, awaiting its floating off in case of disaster. "Truly an ingenious fad of blissful ignorance." The lifeboat will always remain the contrivance true to its title, a miniature seaworthy craft, on which many new features, however, in regards to longitudinal seats along the sides as well as in the center line on differently constructed air cases may be adopted, which would give the boat a superior seating capacity and stability, and also make it for the time being practically unsinkable.

Binoculars for the crow's nest, on which the Senate investigation committee has apparently laid so much stress, is, in the writer's opinion, of minor consequence. The trained eye of the sailor seldom is in need of the binocular before an object in sight has attracted his attention, and then only to ascertain the fact. The officers on the bridge, or the man on the lookout who is in continual need of a pair of glasses, should be substituted by those who are not; in other words, replaced by men who have the eyes the profession requires.

In reference to searchlights, the opinion of those who know differs widely in the North Atlantic service. Few

commanders are in favor. However, if a searchlight is placed in the crow's nest, to be operated from the bridge above the men on the lookout and is placed in such an angle that no rays from it can reflect on any part of the forward ship, which imperatively must be kept in utter darkness, I am inclined to believe it can be used to good advantage in clear, but dark, nights whenever such occasion arises.

The wireless equipment, its operation and the personell entrusted with this important aid for safe navigation certainly requires a most stringent revision of its present system and rulings. During disaster, it should at least become a more reliable aid, not only on the sinking ship, but on the vessel in the direct vicinity of the one in distress to promptly assist the latter, and should cease to be the playground on the ocean for unreliable and inexperienced youngsters.

In conclusion, the procedure of the court of inquiry into the "Titanic" catastrophe, held by the first maritime nation of the world, under the able presidency of Lord Mersey, is followed with profound interest throughout the maritime circles of the globe, and this court will unquestionably give an excellent judgment as to the causes of this disaster. We may be assured that it will advise wisely and weightedly on the vital questions of seamanship involved. On the other hand, the maritime world is eagerly awaiting the results obtained by the International Congress of Navigation during the assembly of the world's experts at Philadelphia, which, it may be assumed, will have conscientiously and consistently made sound recommendations to fill the still existing gaps in the all important question of safety in maritime navigation by all nations. E. F.

#### ADDITIONS TO LIBRARY

"Manual of Navigation Laws," by Edwin M. Bacon, A. M., which interesting book is published by A. C. McClurg & Co., Chicago, is a historical summary of the codes of the maritime nations. The author has in this book assembled in concise form data covering the inception, growth and readjustment of the navigation codes of the principal maritime nations, and in a rapid historical survey has presented the information that one who would be fully informed should have upon the whole question of the theory and the workings of the policies of competing nations in their efforts to protect and upbuild their merchant marine. Like the "Manual of Ship Subsidies" by the same author, this work is an impartial and unprejudiced presentation of facts. In this as in the previous essay the author has succeeded in furnishing an informing manual for ready reference, free from theories or opinions. The greater space is accorded to the narrative of the rise and development of the American Navigation Code, and an exhibit of its present status; while the history of the "Maritime Charter of England," now a closed chapter, is given in larger detail than is that of the codes of other foreign nations, since that code was the model upon which all others were more or less fashioned.

#### INTERNATIONAL CONFERENCE

The Board of Trade was strongly condemned in the House of Commons recently for their inadequate regulations for the provision of boats in liners. Mr. Buxton, in reply, said the board had kept abreast with expert opinion on the subject, and their regulations had never been challenged in parliament until after the "Titanic" disaster. The government are in consultation with the German government regarding an international conference on life-saving appliances and safety at sea.

## THE BUSINESS AND FINANCIAL OUTLOOK

**I**N reply to inquiries addressed by the Fourth National Bank of New York to a large number of our leading mercantile establishments, wholesale houses and manufacturing concerns throughout the United States some extremely interesting expressions have been received touching business conditions and the general trade outlook. The canvass covered a wide territory, including cities of Western, Southwestern, Southern and Northwestern States. Summarizing the answers, it may be stated that the general opinion favors:

First. Very definite improvement in business conditions from now on.

Second. Relatively little interference from the coming presidential campaign.

Third. A very positive belief held by well-known business men throughout the United States that the whole country will see sustained improvement in general trade after the November election.

There is no doubt but that business men generally are looking forward with real confidence to the future. The feeling everywhere is that intrinsic conditions are sound, and that there are today few weak spots. In spite of this optimism, however, none of the great mercantile houses report any disposition on the part of its customers to over-trade or to speculate in a large way. On the contrary, it is apparent that most of the small merchants are conducting business on a safe basis, purchasing only such merchandise as they can see a ready market requires. One very suggestive fact, however, is that some of the large wholesale establishments are handling an increasing business in sections where for months the disposition has been to give out very small orders. This shows that some buyers are beginning once more to restock their shelves, after having operated so long on a hand-to-mouth basis.

Another suggestive statement repeated by many of the merchants of the West and Southwest, is that business is not only up to the volume reported at this date last year, but in many departments is showing better results than a year ago. From all quarters comes the statement that business is not being held back by politics in any large way. Some mercantile establishments, whose representatives on the road have made special investigation, report that, except in the important centers of population, little is heard about politics or about the strife under way between candidates for the nomination in either of the great parties. A few manufacturing establishments report hesitancy about engaging in new enterprises until they can see more definitely what the probable issues of the coming campaign will be. But the consensus of opinion is, however, that the people throughout the United States are so in earnest about helping along the business improvement that they are indisposed to worry over politics or the complications of factional fights.

What is equal in importance, perhaps, is the very definite feeling that the crops this year will be highly satisfactory, in spite of the shortage reported in certain sections of the wheat belt. From the West comes the assurance that the crop outlook is much more favorable than it was at this time last year, and that there is every indication of improved business conditions as a result. Although backward crops are reported in certain sections of the South, and while conditions are still far from satisfactory in the territory which suffered most from the floods, the general feeling seems to be that the South will have another prosperous year and that a very fair business will be done in that section.

Much interest attaches to the coming investigation by a congressional committee into the Clearing House sys-

tem of the United States. Our Clearing House system, as developed by the banks of this country, will compare favorably with the system organized by the banks of any other country. Its usefulness during the panic of 1907 was tested in a way which ought to excite the admiration of every one. Should the coming investigation by the House Committee on Banking and Currency be the means of making the general public more familiar with the extraordinary advantages of this system and with the exact relief offered during the troublesome days of the panic period, such publicity will be of the highest importance. The Clearing Houses have always offered protection which the general public has scarcely realized, owing to the unfamiliarity of most people with the technicalities of a highly developed banking system. And since the panic of 1907 this system throughout the United States has been immensely strengthened. With the employment of a competent examiner at the head of a sufficient staff to insure proper inspection of all affiliated institutions, the Clearing House system in large cities has been reorganized in such a way as to eliminate most of the evils which were exposed during the panic of 1907. The safeguards have added enormously to the usefulness of the Clearing House system in the United States and, in the judgment of experts generally, have provided a protection which could not be supplied in any other way.

High bids for money in this market by European banks mean that monetary conditions here are likely to be influenced for some time to come by the developments on the other side. During the next fortnight the preliminary borrowings incident to the half-yearly settlement financing in Europe will have to be arranged. New York appears to be still the chief source of supply for such borrowers, so that it is reasonable to expect that the banks here will have an opportunity to employ their surplus funds advantageously in Europe, if they care to do so. The new traction bond issues, the various railroad underwritings, the prospective borrowings by municipalities and the forthcoming New York State loan will, however, aggregate a considerable burden for the Wall street banks to finance. These demands may lead to a further hardening in money rates later on, especially if the requirements of business men should enlarge, and the adjustment of the half-yearly settlement on this side prove much of a burden. The outlook in general, therefore, is for a more active money market with an ultimate advance in rates which, however, are likely to rule for some time to come at a relatively reasonable level.

The international trade balance is so heavily in excess of what it was at this time last year, and our outstanding foreign credit balances, resulting from the loans made by the New York banks to foreign borrowers, is still so large as to afford a protection to the American market which has seldom been seen at this season in other years. Besides this, the settlement lately reached between the anthracite coal miners and the operators, together with the very definite indications that the unrest of labor in other quarters is not as acute as it was a few weeks ago, shows that the labor problem is not likely to develop serious complications. The fact is that most classes of labor are now well employed, and although there is always more or less discussion of wage schedules at this season of the year, the vicissitudes encountered in 1910 and 1911 are not likely to be repeated.

Because of the great national conventions, this month will witness many important developments which are certain to have a far-reaching influence. The one great achievement is that people are feeling more hopeful about

the future than has been the case at any time since the year opened. The public generally is less inclined to take a pessimistic view of things, and it is becoming increasingly apparent day by day that generally business is bound to improve and that the mercantile classes are not inclined to permit the possible disturbances of the presidential campaign to restrain their operations at a time when the outlook is admittedly getting brighter. It is too early to speak with absolute authority about crop reports, but recent advices show clearly that there is little basis for the exaggerated accounts of serious damage done in the wheat area. Should the harvest be bountiful, it looks as if the country would certainly do a large business in the fall.

THE FOURTH NATIONAL BANK  
OF THE CITY OF NEW YORK.

New York, June 1, 1912.

TRANSATLANTIC STEAMSHIP COMPANY AGREE-  
MENT TERMINATED

**I**N relation to the above we quote from "Fairplay," under date May 16, the following:

"In a prospectus announcing an increase of the capital of the Hamburg-American Line by 25,000,000 marks, it is stated that the agreement between that company and the International Mercantile Marine Company terminated in February. The agreement referred to was made in February, 1902, for a period of twenty years, but each party had the option of proposing a revision of the agreement at the end of ten years and of withdrawing from the agreement at the end of the ensuing year if the revision could not be effected in a satisfactory manner. The agreement arose out of a meeting in New York in 1901 with Messrs. J. P. Morgan & Co., with the object of amalgamating in a trust the great steamship companies participating in the North Atlantic traffic. The Hamburg-American Company and the Norddeutscher Lloyd did not see their way to become a portion of the trust in the same way as the White Star Line and other companies, and therefore entered into an agreement which would have practically the same result. Messrs. Morgan, on behalf of the International Company, undertook not to acquire shares in the German companies, either directly or indirectly, while the German companies undertook to abstain from the direct or indirect acquisition of shares in the combine; but the German companies each agreed to pay over to the International Company a portion of their dividends which would correspond to the ownership of at least 20,000,000 marks in shares, and in the event of their capital being increased the combine had the right to increase the 20,000,000 marks to the extent of 25 per cent of the total capital. It was also agreed that the two German companies should receive 6 per cent on the same amount of capital from the combine. The Morgan combine agreed not to send any of its vessels to a German port without the consent of the two German companies, while the German companies undertook to observe certain restrictions in respect to their traffic with British ports. It was also agreed that the North Atlantic saloon passenger traffic of both parties was to be regulated by a separate agreement with the object of arranging a pool for this branch of the business, while the pool arrangements regarding third-class passengers, which had been carried out for more than ten years between the companies concerned, was to remain in force. The combine gave the Hamburg-American Line an understanding that it would leave to that line exclusively the traffic between New York and East Asia and the traffic between New York and the West Indies.

MAIL CONTRACT AWARDED TO THE OCEANIC  
STEAMSHIP COMPANY OF SAN FRANCISCO

We note with particular satisfaction the restoration of the postal service on the Pacific Ocean for carrying mails from San Francisco to Sydney, Aus., and return, through the acceptance on June 3d by Postmaster General Hitchcock of the proposal of the Oceanic Steamship Company of San Francisco, which service will be inaugurated on July 2d, commencing with the sailing of U. S. M. S. S. "Sonoma."

The contract stipulates that trips shall be made direct from San Francisco, with calls at Pago Pago, running every twenty-eight days. It is provided that the trip from San Francisco to Sydney shall be made in twenty days. This contract has been awarded for a period of ten years.

The service will be contributed by the liners "Sonoma" and "Ventura," which will run between San Francisco and Sydney, and the "Sierra," which will continue to run between San Francisco and Honolulu.

Each of the ships is of 10,000 tons displacement. They are rated 100 A1 at Lloyd's and were built under special survey of the United States Navy as auxiliary cruisers. They are steel vessels, twin screws, driven by two sets of triple expansion engines, developing more than 8,000 h. p., and have a speed of over 17 knots an hour. The ships have double bottoms and are equipped with water tight compartments.

These vessels were recently fitted to burn oil, and have a tankage capacity of 18,370 barrels, which is sufficient, by replenishing at Honolulu, to take the vessels to Sydney and return.

Approximately \$700,000 was expended on the S. S. "Sonoma" and "Ventura" in overhauling and improvements at the Union Iron Works at San Francisco, which expenditure has fully modernized these fine vessels to a high standard of efficiency.

ORIENTAL BERTH

**T**HERE has been little change in berth conditions since our last issue. The inquiry for flour from Oriental markets is quiet, on account of present high prices, and movement is slow.

The Government has rejected the joint bid for transportation of supplies to the Philippines lodged by the Waterhouse Company and Messrs. Dodwell & Company, deciding to make greater use of their transport service.

It is also reported that Messrs. Holt, the owners of the Blue Funnel steamers, have withdrawn from the East-bound Transpacific Conference. This action resulted through interference in rates by the Nippon Yusen Kaisha in the European service, both companies being parties to European, as well as Transpacific conferences. Up to time of going to press, there has been no change in rates. There is a good deal of misunderstanding regarding rates arranged at Conferences of Transportation Companies. The man without specific knowledge is generally prejudiced enough to consider such a conference as of the nature of a monopoly, acting only with the object of extracting exorbitant rates from shippers. The opposite condition prevails. Transportation companies have to adjust their rates in order to build up trade, and agree to charge equal rates, that business may be conducted along lines of least resistance. The experience of Pacific Coast millers is that they have made large profits out of their flour shipments to Oriental points, while the trading accounts of the majority of the conference lines, with and without backing of railroads, show serious losses. If the Government could exercise any authority over oversea trade, and command that "fair" freight rates be charged for the movement of all cargo, the Conference lines would probably welcome an investigation of conditions.



## CALCUTTA-PACIFIC COAST FREIGHT CONFERENCE

The trans-Pacific freight trade, particularly that portion concerned in exports from Calcutta to the United States, is agitated by the severance of the connection with the Calcutta-Pacific Coast Freight Conference of the Nippon Yusen Kaisha, the subsidized Japanese company which maintains a trans-Pacific service from Hongkong to Puget Sound ports and has maintained a service between Calcutta and Kobe via Hongkong. The severance is by formal action of the conference lines. The action grows out of the establishment of this Japanese Calcutta-Kobe service which sought chiefly to reach the trade in gunny bags for the United States. Upon the Calcutta-Hongkong conference lines refusing to admit the Japanese line as a member, the latter announced that unless the conference would admit its Calcutta service the company would withdraw from the gunny agreement of the Calcutta-trans-Pacific service. It appears, however, that previous to this announcement the company signed forward contracts for gunny business to the United States for the season commencing July 1, 1912, contracts made before the conference had agreed upon rates for such season; and for this course the conference took the action noted.

The result is expected to be a long and hard freight rate war on trans-Pacific freights and particularly upon goods from India for the United States by way of the Pacific. The chief commodity affected is gunny sacks, but the trade also includes large quantities of jute, hessian cloth, tea, kapok, iron, bone meal, pepper and condiments, coir hawsers and yarn, indigo, linseed and linseed oil, hemp, ocher, rape cake, myrobolans, tumeric and various other products. The freight on tea from Calcutta to the Pacific Coast is \$12 per ton; that on all other commodities except prison jute \$8 gold per ton; and on prison jute \$6 per ton—all cubic-feet tons and all subject to a deferred rebate of \$2 per ton. Apparently conference rates on other goods have not yet been fixed.

## FREIGHTS AND FIXTURES

We publish beneath the monthly freight report compiled for the Pacific Marine Review by Messrs. Hind-Rolph & Co., of San Francisco:

"There has been no material change in the position during the past month, and the steam market, in particular, has been very quiet, charterers only coming into the market at absolutely the last moment. Rates, however, are maintained at about the same level, and we do not look for any material change for the next month or so.

Turning to the sail market, there was considerable activity in the early part of last month, principally for the west coast of South America. The market, however, has been quieter the last few days, principally on account of shortage or tonnage. Rates seem certain to be maintained, at least, at their present level.

## Steamer Fixtures

"St. Michael," time charter, delivery San Francisco, redelivery Sydney, 6s 9d.

"Verona," time charter, delivery Portland, redelivery Shanghai, 6s 6d.

"Kalibia," time charter, delivery Japan, redelivery Australia (via Honolulu and Puget), 5s 3d.

## Sailer Fixtures

"La Perouse," Columbia River to a direct nitrate port, 55s.

"A. J. West," Grays Harbor to a direct nitrate port, 57s 6d.

"Ariel," Puget Sound, Valparaiso f. o. Pisagua Range, 60s; option Callao, 56s 3d.

"Commerce," Puget Sound, Valparaiso f. o. Pisagua Range, 60s; option Callao, 56s 3d.

"A. T. Brown," Puget Sound, Valparaiso f. o. Pisagua Range, 60s.

"W. A. Holden," Puget Sound, Valparaiso f. o. Pisagua Range, 60s.

"W. F. Babcock," Puget Sound, Newcastle, N. S. W., 47s 6d.

"Poltalloch," Puget Sound to Natal f. o., 76s 3d; less 1s 3d direct; stiffening at San Francisco, 80s.

## NEW FREIGHT TARIFF TO MEXICO

It is officially stated that the National Railways of Mexico, in conjunction with the West India Atlantic Conference lines serving Mexican ports, and the New York and Cuba Mail Steamship Company (Ward Line), via New York, have recently put into effect a new through tariff, giving rates in plain weight terms from numerous European ports to practically all interior points in Mexico served through the port of Tampico. For some years past American shippers have enjoyed a great advantage over their European competitors as regards freight weights, but the new tariff has now equalized matters.

## THE NEW PORT OF VALPARAISO

The firm of Messrs. S. Pearson & Son, Ltd., contractors, of which Lord Cowdray is president, have received official advice from the Chilean Government that the contract, amounting to £2,600,000, for the construction of the new port at Valparaiso, has been awarded to them. The secretary of the firm has informed our London correspondent that it will take seven years to complete the contract. The works will include a breakwater over 3,000 yards long, about half a mile of quay walls of concrete, a fiscal wharf, a jetty, a coal wharf with coal transporters, hoists and cranes, and customs and other warehouses, lighthouse and coast guard stations. When completed the harbor will be one of the finest in any of the South American republics, and will have a minimum depth of 40 feet. Several foreign competitors were in the field, including a Franco-Dutch combination of contractors and a German firm.

## THE HARRISON LINE

The steel screw steamer "Benefactor," built to the order of Messrs. Thos. and James Harrison, Liverpool, was recently launched at Glasgow. This addition to the already large fleet of vessels owned by Messrs. Harrison is 410 feet long b. p., by 52 feet broad, by 32 feet 7 inches depth molded. She is classed 100 A1 in Lloyd's Register. Accommodation is provided on bridge deck amidships for passengers, also for officers and engineers, while the petty officers are berthed in the forecabin and the crew in the poop. The machinery consists of triple-expansion engines having cylinders 24½, 42½ and 72 inches diameter by 54 inches stroke, taking steam from three boilers at 215 pounds pressure.

The Harrison Line, whose headquarters are Liverpool, England, run lines of steamers to the West Indies, Panama route, Tehuantepec route, and Magellan route, the latter being known as the Harrison Direct Line. This line now calls at Santos, Brazil, en route for the Pacific Coast, bringing coffee from there direct.

The Harrison Direct Line was inaugurated in April of last year by the sailing of the "Centurion." Since then the line has maintained a regular monthly service outward to the North Pacific and homeward to U. K.

The support which the new line has received has been very gratifying. Steamers coming out to the Coast have been exceptionally well filled each voyage and have sailed again from Vancouver, Seattle, Tacoma and San Francisco fully loaded on each occasion with general cargo of every description.

## THE "HARTER" ACT

Decision of the Supreme Court in the Case of the "Jason"

THE Supreme Court of the United States has just handed down a decision in the case of the "Jason," which, while it does not go as far as was hoped, yet materially clears the situation in connection with general average contribution where the cause of the sacrifice is due to negligent navigation.

In effect the "Harter" act provides in section 1 that it shall not be lawful to insert in any bill of lading a clause exempting the owner from liability for loss arising from negligence in proper loading, stowage, custody, care or proper delivery of the cargo, and in section 3 it provides that if the owner shall have used due diligence to have the vessel properly manned and equipped he shall not be liable for loss arising from negligent navigation. Under the common law prior to the passage of the "Harter" act a shipowner was liable for all losses and expenses arising from negligence on the part of the crew.

The first important case to come before the courts in this connection was that of the "Irrawaddy." This vessel was stranded through negligence and was floated after sacrifices of both cargo and ship's materials. A general average statement was prepared, treating all sacrifices as general average, and claim was made against the cargo for its proportion. The District Court sustained the claim of the shipowner, but the Supreme Court reversed this decision and held that the "Harter" act had not affected the status of the shipowner as it existed prior to the passage of this act.

The next important case was that of the "Strathdon." The cargo of this steamer caught fire, alleged through negligence on the part of the donkeyman in allowing the flue of the donkey boiler to become red hot, and the fire was extinguished after a sacrifice of some cargo and ship's equipment. The cargo owners claimed the right of contribution from the ship in general average for its loss, but denied the right of the shipowner to claim for his sacrifices, relying somewhat on the decision in the "Irrawaddy" case. The District Court held that, although the owners of a vessel are exempt from liability for damage to cargo caused by negligence on the part of the crew, yet if the cargo owner claims for his damage in general average the shipowner would have the right to offset the claim in so far as his sacrifices were concerned. The Circuit Court of Appeals upheld this decision, but the value of the decision was rather weakened by the finding of that court that it was not at all satisfied that the fire was caused through negligence. However that may be, the decision was very unsatisfactory, for it left to the cargo owner the privilege of claiming through general average where his claim for contribution would be more than the claim against him for ship's sacrifices, where he would not make such a claim if the balance was against him.

Following this came the case of the "Yucatan." In both of the cases mentioned there was no clause in the bill of lading touching on the rights of either party to claim in general average for sacrifices made in time of common peril, but in this case a clause was inserted in the bill of lading providing that in event of general average sacrifices to avert a loss, the cause of which was negligence on the part of the crew, the general average should be stated as if there had been no negligence. In this case the District Court held that while the Harter act relieved vessels and their owners from damage or loss resulting from negligent navigation, yet it did not go to the extent of saying that relief might be had in such cases by allowing stipulations to be made providing for the recovery of general average contributions, and the clause in the bill

of lading was declared to be of no effect, invalid as being contrary to public policy. This case was not appealed.

The next important case was that of the "Jason." This steamer with general cargo and sugar on board was stranded through negligence and was floated after a part of the sugar had been jettisoned and by the sacrifice of some of the equipment of the ship. The bills of lading contained the same clause as those of the "Yucatan." Both the loss by jettison and by sacrifice on the part of the ship were made the subject of general average contribution. Under the adjustment so drawn up the balance to pay was against the sugar, while had the allowance for sacrifices been omitted the sugar would have been a creditor. Suit and countersuit were brought, and the District Court decided adversely to both. Owing to the decision of the same court in the "Yucatan" case the validity of the bill of lading clause was not argued. The case was appealed to the Circuit Court of Appeals, and here the clause in the bill of lading was pleaded as justification for the claims in general average. The court held the bill of lading clause invalid and also held that under the Harter act the ship was exempt from liability to contribute in general average for the loss sustained by the cargo through sacrifice, but that the claimants for such damage could recover by contribution from other cargo interests.

This, as pointed out by W. R. Coe in his work on general average in the United States, left the whole matter in a most unsatisfactory state, as, taking two ships, one stranded through pure accident or by "force majeure," and the other stranded through negligent navigation, and both being floated after jettison of cargo, the one stranded through the fault of the crew would be in a much better position than the one stranded without fault. In an attempt to clear the situation three questions were certified to the Supreme Court of the United States as follows:

"Whether the general average agreement (the clause in the bill of lading) is valid and entitled the shipowner to collect a general average contribution from the cargo owners under the circumstances above stated in respect to sacrifices made and extraordinary expenses incurred by it subsequent to the stranding for the common benefit and safety of the ship, cargo and freight?"

"Whether in view of the provisions of the third section of the Harter act, the cargo owners, under the circumstances above stated, have a right to contribution from the shipowner for sacrifices of cargo made subsequent to the stranding for the common benefit and safety of ship, freight and cargo?"

"Whether the cargo owners, under the circumstances above stated, can recover contribution from the shipowner in respect of general average sacrifices of cargo without contributing to the general average sacrifices and expenditures of the shipowner made for the same purpose?"

After a rather exhaustive review of the cases above cited the Supreme Court has handed down its decision that the answer to the first two questions must be in the affirmative and to the last question in the negative.

The digest of the decision seems to be that under the Harter act the shipowner cannot contract himself out of liability for loss or damage to cargo resulting from improper loading, stowage or delivery, that being contrary to public policy and contrary to the first section of the act. That the act, of itself, does not compel the shipowner to reimburse the cargo owner for losses or sacrifices arising through negligence on the part of the crew, either directly or indirectly, as through contribution in general average, but, on the contrary, exempts him from such liability, and

that being so exempt there is nothing repugnant to the act or under it to public policy, to contract himself and the cargo owner into an agreement to submit to a general average contribution as if the causes leading to the sacrifices were purely accidental rather than by fault. By this decision the findings in both the "Irrawaddy" and "Strathdon" cases, there being no negligence clause in the bills of lading, are sustained, while the finding of the District Court in the case of the "Yucatan" is reversed.

This decision clears the situation very materially and is very satisfactory to merchants, shipowners and underwriters, and while it was hoped that the language of the Harter act could be so interpreted as to lead to this conclusion, yet it seems that all that shipowners have to do is to insert a clause in their bills of lading similar to that under discussion in the "Jason" case, which clause is as follows:

"If the owner of the ship shall have exercised due diligence to make said ship in all respects seaworthy and properly manned, equipped and supplied, it is hereby agreed that in case of danger, damage or disaster resulting from fault of negligence of the pilot, master or crew in the navigation or management of the ship, or from latent or other defects, or unseaworthiness of the ship, whether existing at time of shipment, or at the beginning of the voyage, but not discoverable by due diligence, the consignees or owners of the cargo shall not be exempted from liability for contribution in general average or for any special charges incurred, but, with the shipowner, shall contribute in general average, and shall pay such special charges, as if such danger, damage or disaster had not resulted from such fault, negligence, latent or other defects or unseaworthiness."

R. B. H.

#### LOSSES FOR THE WINTER 1911-1912

The following item regarding the exceptionally heavy losses to underwriters for seven months beginning September 1st, 1911, is taken from "Fairplay." The losses here mentioned comprise only total losses. In addition to these there were innumerable heavy weather damages which called for payments by underwriters, and these, added to the amounts given, would swell the total claims very materially:

"The long winter having at length passed away, underwriters certainly had some ground for expecting a decided lull in the storm of losses and heavy casualties that have fallen to their lot since September 1 last. What that storm has been it is very difficult fully to realize until you get the cold facts before you as they appear in the full list of steamers lost between September 1, 1911, and April 1, 1912. The total is simply appalling, and exceeds anything that has been known in any like period in the history of the business. One hundred and fifty-six steamers, with an average tonnage of 2,138, and a total value at, say, £8 per ton of £2,408,000, are the figures that this wintry seven months has given, and to these must be added the uninsured steamers "Ixion," "Delhi" and "Oceana." If to the value of the hulls be added three millions for the cargoes, it can be more clearly understood what a time underwriters have gone through.

April saw a slacking down in the number of losses, but it gave the "Sarmiento," "Zinnia," "Cathcartpark," "Granfos" and "Strongvaar," while, needless to say, one loss—the "Titanic"—brought up the average to a height in tonnage and value greater than any month within memory."

The Cunard directors will award one month's extra pay to every member of the crew of the "Carpathia" for the services rendered in the rescue of the survivors of the "Titanic."

#### UNDERWRITERS' LOSSES

The casualty returns compiled by the Liverpool Underwriters' Association for the month of April, 1912, are unpleasant reading. The estimated loss by the more important casualties during the month is £2,323,000 as compared with £675,000 in the corresponding month of last year. Apart from the loss of the "Titanic," the worst casualty recorded is the disappearance of the "Maroa," a vessel of 6,802 tons gross register, posted "missing" on her voyage from Cardiff for Colombo.

#### DECISION IN SHIPPING APPEAL

Judgment in the House of Lords was given in an appeal by Messrs. J. and E. Kish, shipowners, of Sunderland, the respondents being Messrs. Chas. Taylor, Sons & Co., timber merchants of Liverpool. The question was whether, where a vessel commences a voyage in an unseaworthy condition, and it becomes reasonably necessary in consequence for her to deviate in order to put into a port of refuge for repairs, such deviation puts an end to the contract of carriage, and the shipowner is or is not entitled to enforce against the cargo owners a lien upon the cargo for "dead freight" under the terms of the charter party imported into the bills of lading. The Court of Appeal held against the shipowners, and Lord Atkinson stated that the appeal ought to be allowed, with costs, and, further, that the case should be remitted to the Court of Appeal to deal with the award of damages by Mr. Justice Walton, against which both parties had appealed. The Lord Chancellor and Lord Macnaghten concurred, and the appeal was allowed with costs in that house, other costs to abide final judgment.

#### WRECKS, CASUALTIES AND MISCELLANEOUS REPORTS

"S. N. CASTLE," bktn., at Honolulu, May 12th, while vessel was being fumigated the cargo of copra caught fire and damaged the bark to the extent of about \$1,000. Later when leaving Honolulu for San Francisco the bark fouled the schr. "Sailor Boy," carrying away the schooner's bowsprit.

"MAYFLOWER," schr., from San Francisco May 11th for Siuslaw became water-logged, was picked up by the str. "San Pedro," and towed to San Francisco.

"CATANIA," str., at Astoria May 30th, from Pt. San Luis, went ashore on Clatsop Spit, but was floated apparently undamaged.

"OAKLAND," dredger, on dry dock at Long Beach, caught fire on May 27th and was practically consumed. Value of the dredge with equipment complete about \$90,000, but considerable of the equipment had been removed prior to the craft going on dry dock and was not involved.

"DELHI," str., from Seattle, May 29th, for Kuskokwin, returned to Seattle on June 2d leaking badly. Considerable cargo in afterhold reported to be damaged. Has since drydocked and proceeded.

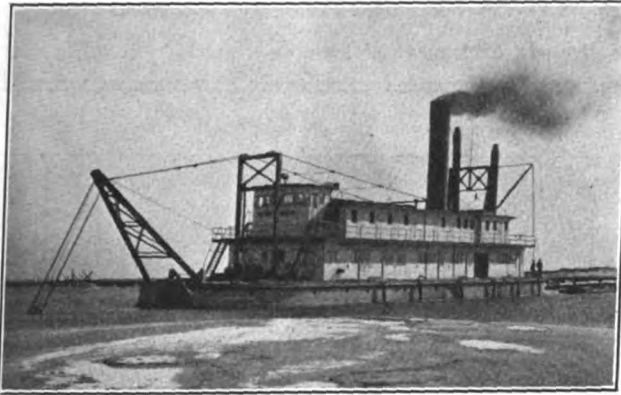
"ARMERIA," U. S. lighthouse tender, ashore near Cape Hinchinbrook, May 23rd, is entirely submerged, and is being battered to pieces by heavy southwest swell. Revenue cutter "Manning" and tugs "Annis" and "Salmo" were trying to assist vessel, but without avail.

"CITY OF PUEBLA," str., lost blade of propeller off Cape Blanco at 1 p. m. on May 23, while bound from the Sound for California.

Shipments of material for the eight four-ton electric cargo-hauling cranes for the steel pier at Balboa, contract for which was awarded the Maine Electric Company in July, 1911, have begun to arrive, and the work of erecting the two first at the southern end of the pier is in progress.

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### RECENT PATENTS

**A**MONG the recent patents filed is one of an unsinkable lifeboat by Joseph Pastorel, of Ashbury Park, N. J., the framework of which is constructed of hard rubber and which is described by the inventor as follows:

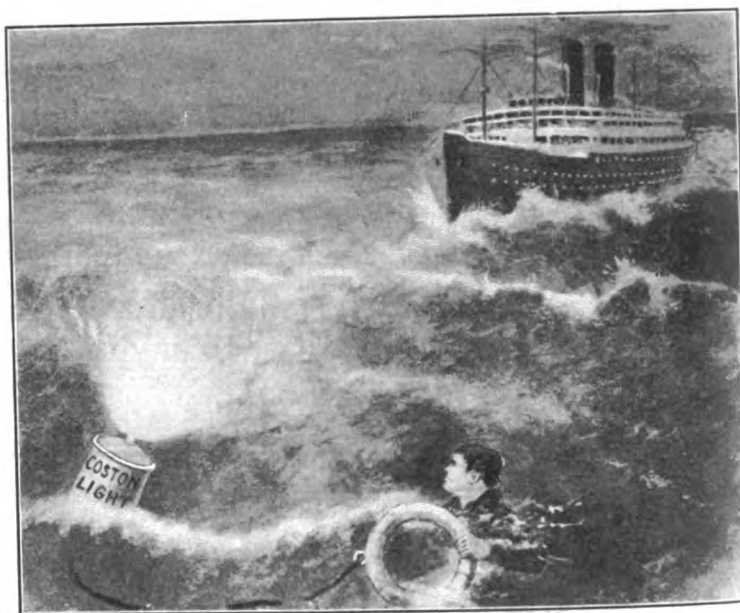
"An unsinkable boat comprising a hull or framework of hard rubber, a plurality of sheets of air-tight and water-proof material secured to said hull on the inside and outside thereof between the gunwale and the keel, said sheets forming a longitudinal row of air compartments on each side of said boat, and a tube of elastic material secured along each side of the framework or hull at the level of the gunwale, forming an additional series of air compartments on each side of the boat; to increase the buoyancy of the craft still further and balance the same."

We are unable to state what the framework of such a boat moulded and cast of hard rubber would cost, but are inclined to think that the price would be prohibitive, considering the casting itself, which would present some special difficulties. After obtaining the framework of the hull the next problem is to form the watertight compartments by means of rubber cloth on the inside and sheet rubber on the outside, the edges to be cemented to the framework so as to be airtight and watertight.

Rubber is a material which is of great commercial value, and is used for a great variety of purposes on shipboard for making watertight joints. It is very difficult to obtain the proper grade of rubber, however, and with the impurities ordinarily mixed with the rubber compound, the life of the article is very limited. The present use for rubber is somewhat novel, and it is believed that in place of an unsinkable boat, we have here a boat that can be considered as very sinkable. It will be very hard to obtain a suitable and lasting cement that will not leak. It will be commercially impracticable to obtain suitable rubber sheets for the purpose and the result will be the rubber will rot and crack, leaks will develop, and in place of the elastic resistance expected when striking a floating object, the airtight compartments will easily be torn open, whereupon the boat, especially if iron weights are used for ballast, will quickly sink.

It is presumed that the rubber cloth is used on the inside of the framework of this boat in order that the sheet rubber on the outside will be forced out when air pressure is applied. While this would be necessary, it is probable that the inside rubber cloth would be bulged inward to a considerable extent, especially where subjected to the water pressure, and if the inside were made of the same material as the outside all the bulging would be on the inside, the direction of least resistance.

While the buoyancy of the boat might be increased it is doubtful if there would be any reduction in the resistance. The numerous airtight compartments inflated to different sizes would result in a very uneven surface, and what little is gained, due to freeboard, would be lost in this direction.



### THE COSTON SIGNAL WATER LIGHT—ITS USES IN LIFE-SAVING SERVICE AT SEA

In addition to the scheduled signal and spare lights, various rockets, etc., for night signalling, we think it not unlikely that the new regulations governing the life-saving equipment of steamships may recommend the carrying of a specified number of water lights, for use either as a rescue buoy signal light or as a powerful deck flare in emergency cases. In this respect we desire to call attention to the "water light" of the Coston Signal Company, Inc., who are the sole agents and distributors in the U. S. A. of the life buoy and standard water lights, which, be it noted, are not under the explosive act, and are self-igniting in water and are inextinguishable by wind or water. In this last connection, some years ago, the writer tested one of these water lights. After immersing the light in a suitable receptacle containing water, and after letting it burn for about one-half hour, completely buried the light under a mixture of powdered ice and snow, extinguishing it for only a few minutes, until it had cleared itself, when it immediately flared as brightly as before. One of the chief features which recommends this light is the fact that it is always ready to be used in any emergency.

The life buoy water light is made in a uniform size, viz., 8 inches diameter by 10 inches long, weight 5½ pounds, burns for 45 minutes and is of 250 candle power. The illustration shows the outside of the light, and the method of attaching the light and buoy to the ship's rail is as follows: Attach a line to the ring at the bottom of the can and then to the life buoy; hang the light on the ship's rail by the ring at the top. It is then only necessary to pull the can from the hook, which operation unseals a soft metal cap, and this makes the light self-igniting immediately it strikes the water.

The Standard Water Light is generally used for a deck

## Woolsey's Copper "BEST" Paint

THE WORLD'S STANDARD FOR THE PRESERVATION OF WOOD UNDER WATER



Trade Mark

Woolsey's Copper BEST Paint is sold in every country for use on the bottoms of wood vessels and boats of all kinds.

In Japan and other countries our labels have been imitated and put on home production of paints, which is the best testimonial we can give as to its merits and efficiency.

About every paint manufacturer in this country at some time has made and put on the market a Copper paint, but so far practically all, or nearly all of them, without any satisfactory results, and WOOLSEY'S COPPER "BEST" Paint continues to take the lead. It does just what the manufacturers claim for it and the price is kept at a minimum in comparison with cost.

Woolsey's Copper Paints are sold at a lower price on the Pacific coast than in any other place in the world, for the reason that we have no traveling men to pay in that territory and the amount saved in this way is deducted from our selling price and the consumers get the benefit.

With these facts in view, there should be no inducement for vessel owners to experiment with unknown compounds and taking a chance of having their vessel's bottoms eaten and destroyed by the Terebo worm and coated with barnacles, sea grass, etc.

**C. A. WOOLSEY PAINT & COLOR COMPANY, JERSEY CITY, N. J.**

## Fireman's Fund Insurance Company

OF SAN FRANCISCO

**HULLS, CARGOES, FREIGHTS and DISBURSEMENTS INSURED**

Losses Made Payable at Any of the Principal Ports of the World

For Rates and Policy Conditions Apply to

**FRANK G. TAYLOR**, General Agent for Washington, Oregon, Alaska and British Columbia

263 AND 264 COLMAN BUILDING, SEATTLE

## MATHER & COMPANY

AVERAGE ADJUSTERS AND INSURANCE BROKERS

**Agents: Aetna Insurance Co. of Hartford**

PHILADELPHIA

NEW YORK

BOSTON

SAN FRANCISCO

104 Grand Trunk Pacific Dock

SEATTLE

## BRITISH DOMINIONS

**General Insurance  
Company, Ltd.**

HEAD OFFICE: No. 1 Royal Exchange Avenue, London, E. C.

**CALHOUN, DENNY & EWING, Agents**

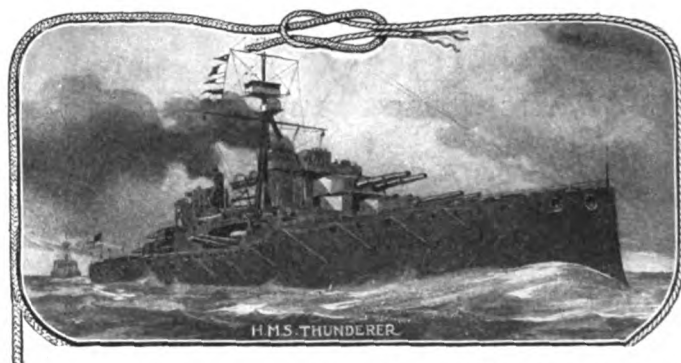
**SEATTLE, WASH.**

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flare or for embarkation purposes, but it may also be thrown overboard in an emergency, as it is buoyant. It burns for over one hour and gives a light of over 300 candle power. These lights have been approved and recommended by the United States Board of Supervising Inspectors, and also been specially approved by the British Board of Trade for the equipment of ships, and they are in use by the United States navy, United States life-saving service, United States quartermaster's department, United States revenue cutter service and many steamship lines and yachts.



The above illustration shows the battleship "Thunderer," built by the Thames Iron Works Shipbuilding & Engineering Company. On the recent trial trip of this battleship "Palmetto" packing was used aboard the vessel, as in the judgment of the builders even so small an item as the selection of the rod packing was to be carefully considered.

The reason "Palmetto" packing was selected to work under such an extreme condition is because it contains no vegetable substance, and by a special treatment of each single strand with a graphite grease lubricant before plaiting, the tendency to harden is removed. The lubricant serves the double purpose of preserving the soft, pliable nature of the packing, and so lubricating the rod as to reduce friction. This packing is manufactured by Messrs. Greene-Tweed Company, 109 Duane street, New York City.

## CHAS. C. MOORE AND CO. SECURE CONTRACT FROM SMITH LUMBER COMPANY

Contract has just been awarded to Charles C. Moore & Co., engineers, with offices in all the principal cities on the Pacific Coast, for a complete power plant installation for the C. A. Smith Lumber Company at Marshfield, Ore.

The plant is to consist of a 2,000 kilowatt mixed pressure General Electric turbine, one 500 kilowatt high pressure General Electric turbine and electrical equipment. Steam is to be supplied by two Stirling boilers of about 425 h. p. each. These boilers are to be used in connection with the present boiler plant equipment and will furnish the additional steam necessary for the new installation. The plant will also be equipped with a 3,500 h. p. Platt Iron Works Company feed water heater. The condensing equipment will consist of Wheeler Condenser & Engineering Company's rectangular centrifugal jet condensers with motor driven tail pumps and Wheeler Condenser & Engineering Company's rotary dry vacuum pumps.

The contract also includes all of the piping for interconnecting the apparatus in the turbine room. The contract has been awarded on the basis of the delivery of all the apparatus complete, f. o. b. San Francisco, and there is to be furnished by Charles C. Moore & Co., engineers, one of their staff of erecting engineers to superintend the installation.

The contract price amounted to something less than \$100,000.

The C. A. Smith Lumber Company, in awarding the contract to Charles C. Moore & Co., engineers, took into consideration the quality and reliability of the apparatus offered, for the reason that besides furnishing power for operating their mill the new installation will be used to furnish power to the local power company, who will purchase

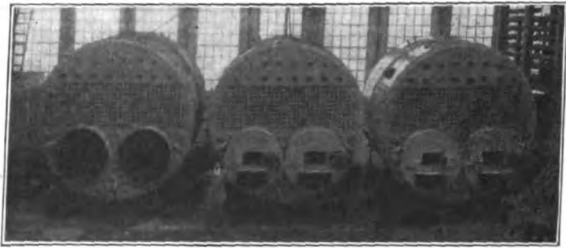
it wholesale from the Smith people. It will be essential to run the plant continuously, and the fluctuating loads which are met with in sawmill plant installations have to be taken care of without disturbance to the current which is furnished to the power company and which might seriously interfere and disturb their transmission lines.

The Stirling boilers which are used are of a well-known make and particularly suited for sawmill installations where refuse material and sawdust are used for fuel. The steam turbines are of substantial construction and their reliability has been proven by installations operating under similar conditions. The condensing equipment is of a rather new design, which was originally put on the market some few years ago by the Wheeler Condenser & Engineering Company. This is a jet type of condenser, in which the circulating water and condensed steam are removed by a tail pump located directly underneath the condenser shell. The circulating water is drawn into the condenser by the vacuum, and the vacuum is originally created and air is removed during operation by a rotary dry vacuum pump. This type of equipment, for high vacuum work, which is necessary for low or mixed pressure turbines, is the most economical to operate which has yet been designed.

Altogether the installation is a very unique one, part of the steam for operating the large and mixed pressure turbine being taken from the main mill engines without imposing any additional load on these machines or requiring additional steam for their operation. This is the largest machine of this type which has been installed in any sawmill in the Northwest, and will illustrate the possibilities which are available in sawmills for the production of cheap power.

# MARINE BOILERS

DESIGNS MOST MODERN  
WORKMANSHIP FIRST CLASS  
DELIVERIES PROMPT



WRITE FOR OUR PROPOSITION

**Manitowoc Boiler Works Company**  
*BOILER SPECIALISTS*

Manitowoc, Wisconsin

Chicago Office, Ins. Ex. Bldg.

## Automatic Acetylene Gas Buoys

### Beacons and Other Aids to Navigation

These buoys are in reality floating lighthouses. The candlepower of their lights range from 140 to 1,060, according to the size of the lantern used.

They generate their own gas under low pressure, therefore no generating or compression plants on shore are necessary. With one full carbide they operate continuously for from six months to a year.

**Larger Type Buoys Are The Equal of Lightships**

Manufactured by

**The International Marine Signal Co., Ltd.**

OTTAWA, CANADA



**A. J. MORSE & SON, Inc.**  
**DIVING APPARATUS**

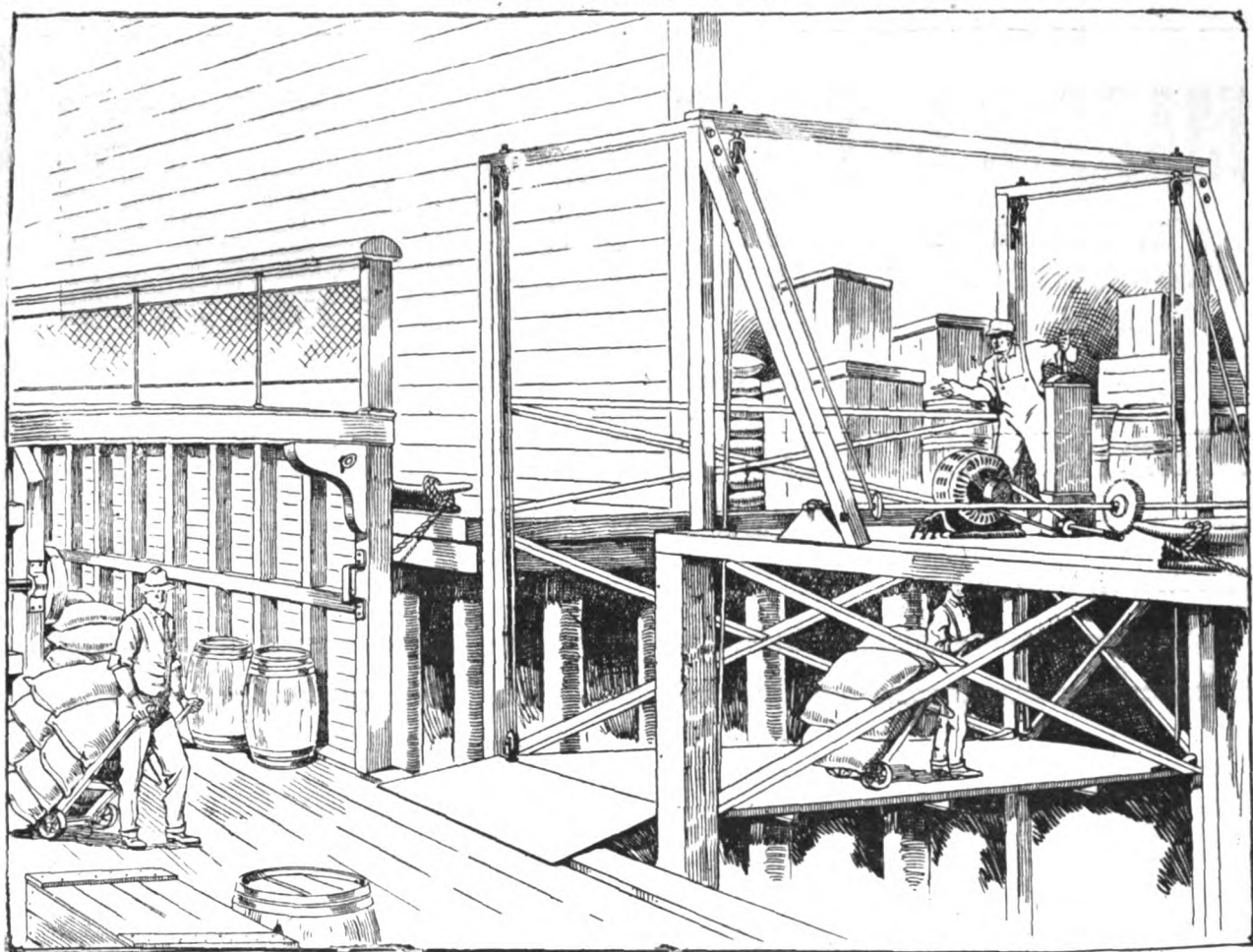
FIRE SUPPLIES AND THE  
INVINCIBLE NOZZLE ::::

221 High Street

BOSTON, MASS.

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## A NEW MARINE ELEVATOR

ON June 3rd last, the writer witnessed with more than passing interest the first practical working of the Barlow Wharf Elevator, recently installed on the Colman Dock, in Seattle, which, from the points of efficiency, simplicity, economy and saving of time without any damage to cargo in lowering and discharging either, through ports or from deck of vessels, during a low or high stage of tide, excels any mechanical appliance which so far has been placed on wharfs. The illustration shown herewith gives some idea of the working of this marine elevator patented by Capt. H. Barlow and owned by the Marine Elevator Company, of Seattle, which unquestionably will revolutionize to no small extent the handling of freight to and from all classes of vessels, in particular of those employed coastwise. For deep sea traffic, it will be advantageous on the double-decked piers to be built in future.

By the use of Barlow's Marine Elevators and Adjustable Gangways the loss usually attendant with loading and unloading of freight in the ordinary way is reduced to the minimum as with its use there is no more danger of damage to freight in being lowered into or removed from a vessel than in moving freight in a room. By its use no freight can be lost, as is often the case, from slips, ordinary gang planks or breakage in slings. This elevator is especially adapted for use in loading or unloading machinery or live stock where special care in handling is required, and in expeditiously and economically handling general cargo.

By the use of these elevators and adjustable gangways a vessel can be loaded or unloaded in half of the time usually required where ordinary methods are in service and with more satisfactory results.

Vessels equipped with these elevators with adjustable gangways are not required to go to slips to unload, but can

unload on any part of the wharf where the boat can moor.

Selections can be made from several designs, thoroughly protected by patents, which are suitable for use on different kinds of vessels and wharves. The use is unlimited and adaptability will manifest itself, as the one recently installed on the Colman dock.

The Barlow boat elevator and adjustable gangway is a moveable platform, forming when not in use part of the upper deck of a vessel. This platform by means of especially arranged mechanical equipment can be lowered to the lower deck or hold of the vessel and raised to a point above the upper deck and is so built that the platform can be stopped on a level with the location of the place from where the freight is to be taken or placed. The platform is raised or lowered by means of engine or motor located at a point from where the man in charge can easily overlook the operation of the platform and cause it to be stopped at the right point. The platform is lowered or raised as desired to accommodate the loading or unloading of the vessel. The hoist is located at a place best suited to the arrangement of the vessel on which it is installed.

This elevator and adjustable gangway is more especially needed on ships plying on waters subject to change by tides and which makes stops at wharves of different heights where not enough freight is handled to warrant the installation of a wharf elevator.

The Barlow wharf elevator and adjustable gangway is adaptable for use on all wharves at which boats make landings for the purpose of taking on or discharging freight. The elevator or platform is arranged to provide a safe and easy manner to load or unload freight to or from wharves to vessels. The elevator by use of automatic machinery can be positioned to be on a level with the opening or deck of the vessel for loading or unloading and then moved to the level of the wharf for the same purpose.

E. F.

# DAHL Oil Burning System

Concludes All  
ARGUMENT IN FAVOR OF

## Oil Fuel

---

### Dan E. Erickson

PIER 2, SEATTLE

AGENT

PUGET SOUND, BRITISH COLUMBIA AND ALASKA

# MOORE & SCOTT'S IMPROVED HIGH PRESSURE OIL FUEL SYSTEM

Patents Pending

THE CHEAPEST, SIMPLEST AND ONLY WAY TO BURN LIQUID  
OIL UNDER MARINE BOILERS

Absolutely Noiseless

No Steam Nor Air Compressor Necessary

*Results Guaranteed*

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## MOORE & SCOTT IRON WORKS

SAN FRANCISCO

We will defend at our expense any suit at law which may be instituted  
for infringement against the use of our High Pressure Oil System.

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# DURABLE WIRE ROPE COMPANY

BOSTON, MASS.

Durable Rope For

## COAL FALLS, CARGO HOISTS, SLINGS, HATCH LIFTS

PACIFIC COAST AGENTS:

### JOHN A. ROEBLING'S SONS CO.

SEATTLE

SAN FRANCISCO

PORTLAND

## AVENARIUS CARBOLINEUM WOOD PRESERVING

**T**HE decision of the Harbor Commissioners of San Francisco to award a contract to the Carbolineum Wood Preserving Company for wooden blocks treated with Avenarius Carbolineum, to be used on the two new piers now building at that port, would indicate that this civic body has thoroughly studied conditions regarding the maintenance of a wearing surface for driveways on piers. The bids of the Carbolineum Wood Preserving Company were considerably higher than those for creosote.

The conditions with which a pier driveway has to meet are of such a nature that the construction of a surface which can stand the traffic as well as the wearing and vibrating of the entire structure, which are always present and more pronounced when a vessel touches the wharf while docking, have always been a problem for terminal engineers. From actual observation the writer has found that the trial section of avenarius carbolineum blocks at the Pacific Coast Company's Pier B, in Seattle, is without doubt the only material which has ever satisfactorily stood the test, and after several year's use the driveway is in as good shape as ever. However, if the height of this pier gateway for the passage of large loaded trucks had permitted a double bedding of boards laid diagonal to prevent the sand sifting through in which the blocks are bedded, the pavement on Pier B would even be a more perfect level than today. The piece of adjacent planking has been repaired repeatedly, necessitating an expense and at times an interruption to traffic. A similar test pavement of creosoted blocks on another Seattle pier conclusively demonstrates that creosoted blocks are but little better than planks, as blocks of this creosote driveway have checked and cracked.

Examination of streets in the city of Portland shows a wonderful life of avenarius carbolineum treated blocks. A number of the business districts were paved with these blocks some twelve years ago, and a recent investigation of the actual condition of these shows less than a quarter inch average wear of the pavement.

The claims of the Avenarius Carbolineum Company are fully substantiated as to the self-impregnation or the automatic internal absorption of avenarius carbolineum through the entire structure of the block, even though the blocks were treated on the surface only with a slight initial penetration. The difference between preserving by creosote and avenarius carbolineum all seem to be in favor of the latter, as the action of creosote is to deaden and mummify the cellular structure and to thoroughly close and fill all the pores of the wood. Creosote preservation seems to accomplish its end by a sacrifice of the outside of the treated timber, the amount of preservation depending on the initial forceful penetration of the boiling hot creosote.

The same effects of preservation by avenarius carbolineum are equally effective on any kind of timber exposed to conditions that will cause dry rot or decay from moisture. Many railroads and transportation companies, breweries and large manufactories have found that their bridges, trestles, coal bunkers and other structures have been preserved and are in as good condition as when erected, simply by the application of two hot coats of avenarius carbolineum at a cost of about the same amount as the application of any good paint, but with a subsequent saving to the painting department.

The use of avenarius carbolineum on ship and boat timbers has been thoroughly recognized by all builders and owners. In addition to being an absolute preservative for this class of work it also does away with any necessity of the use of salt in the bilges and hulls of the vessels.

Avenarius carbolineum is a German product which has been in use some forty years, and its beneficial effects can be stated briefly as follows:

Any substance of a porous nature that will be weakened or destroyed by the action of water can be preserved, as the avenarius carbolineum will thoroughly penetrate all portions, and being heavier than water will actually displace existing water, whether in the form of water or dampness. This same feature of being heavier than water makes it impossible for it to leach or float away.

It is, in fact, the only superficial preservative that has stood the test of time.

The company is represented in Seattle by the Carbolineum Wood Preserving Company, in the Cray building. The firm carries a large stock of material on hand and is prepared and equipped for the successful completion of any contract appertaining to wood preservation. E. F.

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**WEBSTER'S NEW INTERNATIONAL**

—THE MERRIAM WEBSTER

Every day in your talk and reading, on the street car, in the office, shop, and school some new question is sure to come up. You seek quick, accurate, encyclopedic, up-to-date information.

This NEW CREATION will answer all your questions with final authority. **400,000 Words Defined. 2700 Pages. 6000 Illustrations. Cost \$400,000.** The only dictionary with the new divided page. A "Stroke of Genius."

Write for specimen pages, FREE.

**G. & C. MERRIAM CO.,**  
SPRINGFIELD, MASS.



## Announcement

### Season 1912

The Palatial Twin Steel Steamships, MARIPOSA and ALAMEDA (5500 tons displacement), now in service to and from Prince William Sound Ports.

\$100 round trip for excursion including berth and meals and side trip to the great glaciers in Copper River Route.

Write for Folders.

## Alaska Steamship Company

General Offices, Lowman Bldg.  
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## CHICAGO

VIA

### Northern Pacific Railway

And Minneapolis and St. Paul

TWO DAILY THROUGH TRAINS

NORTH  
COAST  
LIMITED



ATLANTIC  
EXPRESS  
(Northern Pacific  
Express when  
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Via North-Western Line  
from St. Paul, through  
Milwaukee, using new C.  
& N. W. Station, Canal and  
Madison Sts., Chicago.

Via Burlington Line  
from St. Paul, down the  
Mississippi, using Union  
Station, Canal and Adams  
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COMPLETE IN EQUIPMENT

ELECTRIC LIGHTS THROUGHOUT

Northern Pacific Famous Dining Car Service  
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The Line to Gardiner, the Official Entrance to  
YELLOWSTONE NATIONAL PARK

Season June 15 to September 15

# Go East This Month

The Fares Are Very Low and the Service Very High Class if You Travel Over the

## O - W. R. & N.

O. S. L. AND UNION PACIFIC

Here are a few of the advantages of choosing this route in making your trip East:

Steel Coaches and Electric Block Signals Protect you all the way.

Oil Burning Locomotives mean no cinders to bother you.

A Perfect Road Bed makes your train smooth running.

Perfect Cuisine and Service and Polite Employees contribute most materially to the pleasure of your journey.

Electric Lighted Trains; Electric Lighted Berths; through Sleeping Car Service to Chicago.

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# COMMERCIAL MOVEMENTS ON PACIFIC COAST

## PORT WARDEN'S REPORT

Port of Seattle, Wash., for Month of May, 1912  
Deep Sea Arrivals

Arrivals—	No.	Net Tonnage.
Nationality—		
American .....	128	192,802
Sailing .....	12	16,406
United States .....	11	6,520
British .....	16	53,993
Japanese .....	5	19,052
Norwegian .....	4	5,301
German .....	2	5,982
<b>Totals .....</b>	<b>178</b>	<b>300,056</b>
Departures—		
American .....	124	178,622
Sailing .....	16	18,224
United States .....	13	7,833
British .....	16	54,792
Japanese .....	5	18,943
Norwegian .....	3	6,150
German .....	1	2,168
<b>Totals .....</b>	<b>178</b>	<b>286,732</b>

Passengers		
From and to—	Inbound	Outbound
Foreign and British Columbia.....	8,521	8,237
Coastwise and Alaska.....	2,998	3,433
Local points .....	124,665	121,739
<b>Totals .....</b>	<b>136,184</b>	<b>133,409</b>

Imports		Value.
From Coastwise points—		
Cement, 150 tons .....	\$ 1,125	
Merchandise, 8,930 tons.....	873,286	
		\$ 874,411

From Alaska points—		
Merchandise, 1,787 tons.....	89,379	
Salmon, 188 cases .....	8,000	
		97,379

From local points—		
Logs, 13,251,841 ft.....	128,220	
Merchandise, 13,045 tons.....	602,242	
		730,462

From the Philippines—		
Hemp, 13,295 bales.....	213,984	
Merchandise, 2 tons .....	2,374	
		216,358

From Pacific Ocean—		
Halibut, 3,085,000 lbs.....	78,264	

Total value domestic imports.....\$1,996,874

From British Columbia.....45,034

From Australia—

Merchandise, 71 tons .....

From Germany .....

From France .....

From Scotland .....

From Ireland .....

From England .....

From South America—

Coffee, 215 bags .....

From Italy—

Merchandise, 77 tons .....

From Norway .....

From Denmark—

Merchandise, 100 tons .....

From Sweden—

Liquors, 140 cases .....

From the Orient.....1,387,290

Total value foreign imports.....\$1,546,489

**Exports**

To Coastwise points .....

To the Philippines .....

To Hawaiian Islands .....

To local points .....

To Alaska .....

Total value domestic exports.....\$2,664,191

To British Columbia .....

To the Orient .....

To England .....

To Germany .....

To South America .....

To Africa—

Salmon, 425 cases .....

Total value foreign exports.....\$1,331,126

## OFFICIAL STATEMENT OF THE CUSTOMS BUSINESS OF THE DISTRICT OF LOS ANGELES, CAL., DURING THE MONTH OF APRIL, 1912

Collections .....	\$54,378.65
Imports .....	222,160
Exports .....	12,703

Imports and Exports by Countries		
	Imports.	Exports.
Austria-Hungary .....	\$ 2,790	
Belgium .....	9,369	
France .....	17,258	
Germany .....	23,197	
Italy .....	5,477	
Netherlands .....	1,829	
Norway .....	12,455	
Spain .....	3,529	
Switzerland .....	1,541	
Turkey in Europe .....	3,370	
England .....	32,470	
Scotland .....	1,739	
Canada .....	11,033	\$11,775
Guatemala .....	5,083	
Mexico .....	13,637	800
Cuba .....	26,749	
Chile .....	21,163	
Ecuador .....	2,131	
Ceylon .....	1,169	
Hongkong .....	7,130	
Japan .....	16,558	128
Australia .....	461	
Philippine Islands .....	681	
Other countries .....	1,341	
<b>Totals .....</b>	<b>\$222,160</b>	<b>\$12,703</b>

**Principal Imports**

Cigars and tobacco .....	\$ 27,514
Nitrate of soda, 877 tons .....	21,163
Spirits, wines and liquors, 12,603 gals.....	20,250
Tea, 38,852 lbs. ....	16,194
Lumber .....	10,923
Pertilizers, 276 tons .....	10,684
Chemicals and drugs .....	8,306
Rice, 130,650 lbs. ....	5,572
Seeds .....	5,276
All other articles.....	69,278
<b>Total .....</b>	<b>\$222,160</b>

Dutiable .....

Free of duty .....

**Total .....**

**Exports to Non-contiguous Territory of the United States**

Hawaii—

Crude oil, 735,000 gals. ....

Distillate, 10,800 gals. ....

Illuminating oil, 32,400 gals.....

Miscellaneous .....

**Totals, 778,200 gals .....**

**Movement of Vessels in Foreign Trade**

Entrance—

No. Net tonnage.

4 American steamers .....

1 American sail .....

3 British steamers .....

1 Norwegian steamer .....

1 German steamer .....

**Total .....**

**Clearance—**

No. Net tonnage.

5 American steamers .....

**Total .....**

Number of seamen arrived—

American .....

British .....

Norwegian .....

German .....

**Total .....**

Number of seamen departed—

American .....

Passengers arrived .....

Passengers departed .....

**AROUND THE WORLD**  
 - 110 DAYS -  
**S.S. VICTORIA LUISE**

FROM NEW YORK NOV. 12, 1912

FROM SAN FRANCISCO FEB. 27, 1913



**\$650**  
 AND UP  
 INCLUDING ALL  
 NECESSARY EX-  
 PENSES ABOARD  
 AND ASHORE

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**HAMBURG AMERICAN LINE**  
 41-45 BROADWAY, N. Y.

BOSTON PHILADELPHIA PITTSBURGH CHICAGO ST. LOUIS SAN FRANCISCO

## Matson Navigation Company

Steamer **HYADES** leaves Puget Sound ports June 22nd, taking freight, cold storage, express and mail direct for HONOLULU, KAHULUI, PORT ALLEN, KAA NAPALI and HILO.

Regular Passenger and Freight Service from San Francisco to the Hawaiian Islands.

Bookings and Reservations may be made at the Seattle Office.

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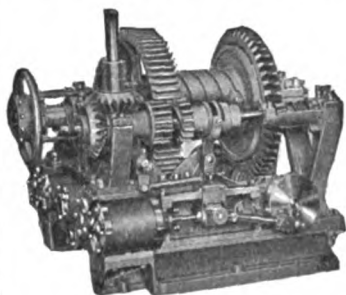
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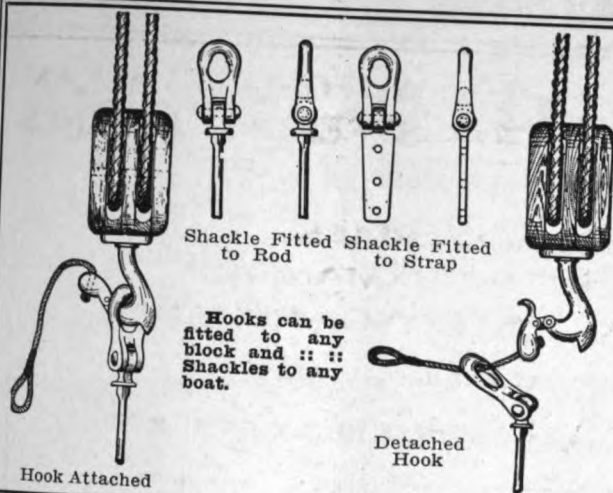
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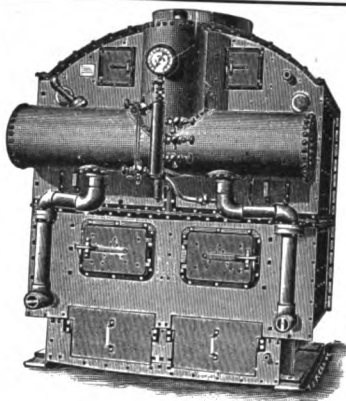
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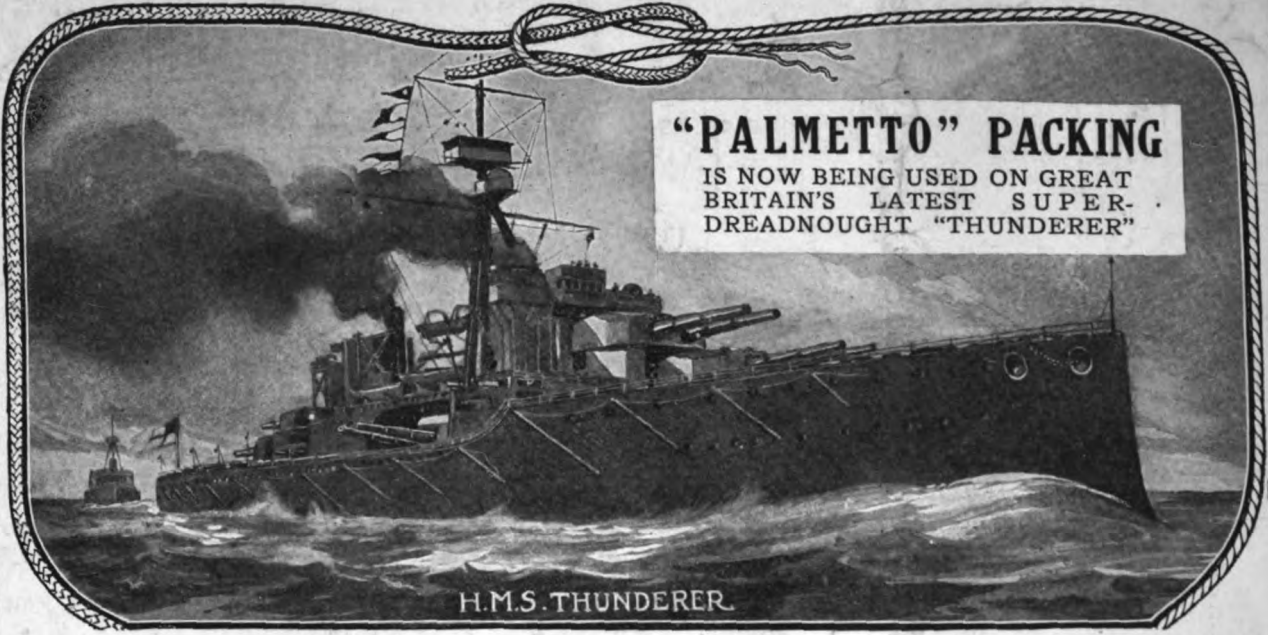
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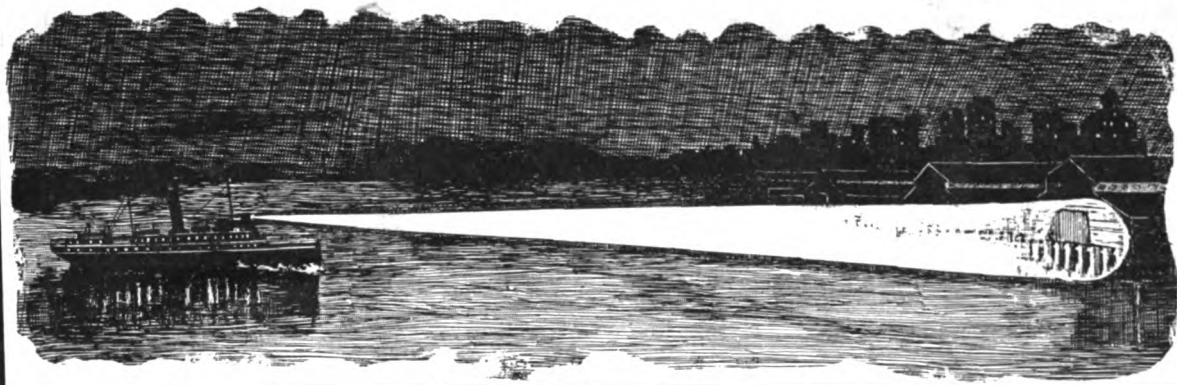
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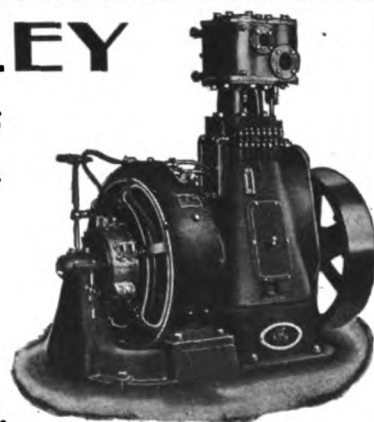
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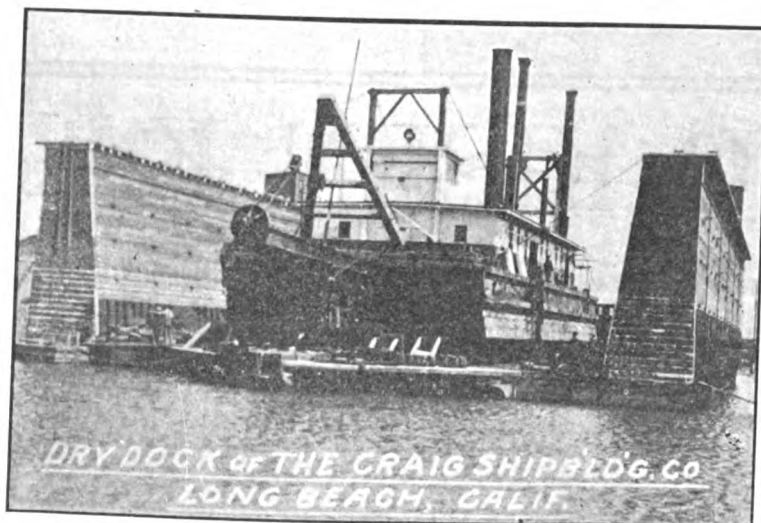
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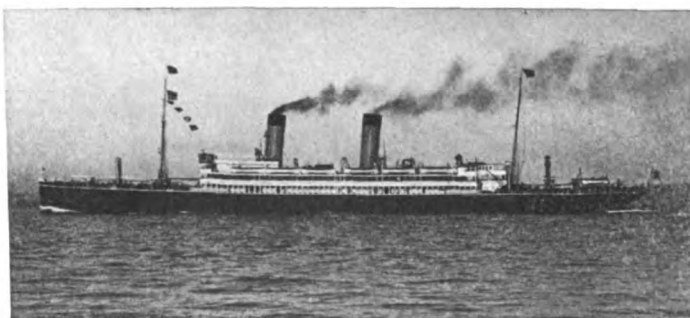
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# PACIFIC MARINE REVIEW

(Copyright July, 1912, by Pacific Marine Review)

VOL. IX

SEATTLE, WASH., U. S. A., JULY, 1912

No. 7

## PANAMA CANAL LEGISLATION

THE PACIFIC MARINE REVIEW notes with satisfaction that the House of Representatives has decided in favor of granting exemption from tolls to steamers of United States registry engaged in domestic commerce, a principle for which this publication has long and earnestly contended, and hastens to express its appreciation of those members who, true to the interests of the people at large, refused to be overwhelmed either by misrepresentation or by the importunities of hostile competitive interests. It only remains for the same representatives to stand firm and to insist that some degree of privilege, direct or indirect, be granted to American steamers engaged in the foreign trade, where, in point of fact, it is more needed than in internal commerce.

The restoration of our long lost ocean carrying trade for our merchant marine, the one industry that gives pronounced meaning to our great work, the completion of the Panama Canal, is a question on which depends the first and vital aid for the branching out of our flag over the seven seas.

As we have previously mentioned, the policy of free waterway is fundamental with our people, hence this principle should be extended to all our ships employed in ocean commerce, whether owned by railroads or not, whether employed coastwise or in the offshore trade. For the domestic trade we are still building ocean vessels, but we deeply deplore that some members of Congress intend to handicap and bar vessels from the Panama Canal trade in which a railroad has either a direct or indirect interest. Transportation is the business of railroads, which have the capital to build ships, with the organization and experience for conducting such. Carriage both by land and by water complement each other and must at all times keep closely allied for the upbuilding and expansion of commerce under our flag. This is the policy which our Canadian neighbors so successfully pursue. Our railroads should be encouraged, instead of being handicapped, in the building of ships for deep water commerce. With full power over railroad rates, I ask what has the government to fear from railroad owned ships going through the Panama Canal free of toll? If such restriction is adopted another blow is struck at American shipping, which becomes impossible to withstand any longer.

The subjoined letter recently addressed by Mr. H. B. Jayne to Senators Perkins and Bristow and Representatives Humphrey, Knowland, Stephens and Sulzer is self-explanatory:

London, April 30th, 1912.

The Hon. George C. Perkins, Chairman Naval Committee,  
United States Senate, Washington, D. C.—

Dear Senator Perkins:

### Panama Canal Tolls, Rules and Regulations

As proprietor of the Pacific Marine Review, I have read with much interest, approval and sympathy your statement upon this subject in the Pacific Marine Review for April, 1912.

May I draw your attention to a statement by me on page 7 of the same issue and to plead and urge that if it

is finally decided to poenalize American steamers, whose owners are members of conferences and or combines in restraint of trade, in navigation of the Panama Canal, that all foreign steamship owners, members of similar conferences and/or combines in restraint of trade, are at least equally poenalized, and may I therefore ask you to bring this issue before the Senate and/or the committee particularly concerned?

Perhaps you can have my communication herein referred to published as a public document and added to the testimony before the committee which has charge of this legislation.

I hope to reach Washington before Congress adjourns.

Yours very truly,

H. B. JAYNE.

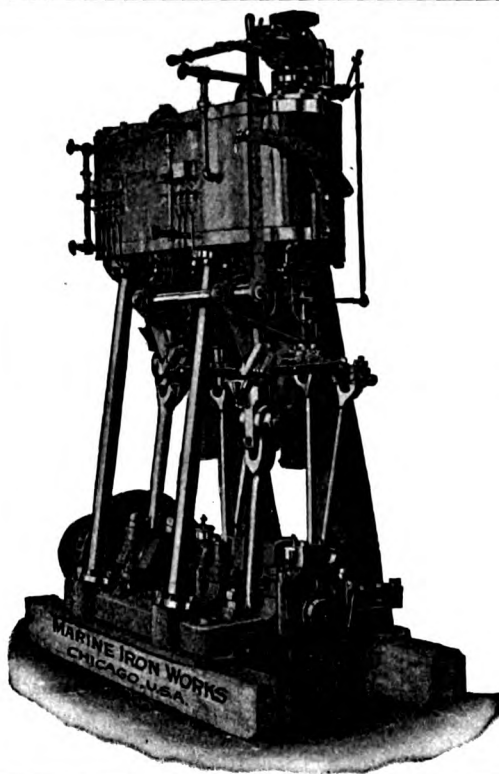
While this publication is opposed to poenalizing steamship lines having close and necessary affiliations with railway and terminal companies, as well as to poenalizing steamship lines members of conferences, still if such legislation is inevitable, to meet popular demand and prejudice, we agree with Mr. Jayne in his contention that it would be most unfair, in fact intolerable, to poenalize only domestic American steamship lines, members of such conferences, and to permit foreign steamships, members and fonders of far more extensive conferences, to navigate the canal without at least equal poenalization.

This is a difficult position, which must be clearly and definitely confronted. United States legislation must either leave alleged railway controlled steamship lines, such as the Pacific Mail Company, in their present "status quo," free to use the canal in common with others, which we recommend, or the United States must be prepared to face the indignation of all great maritime powers, which we are proud to feel it could do, secure in its vast resources and strength, and to denounce all treaties, which now prevent similar regulation and poenalization of foreign steamship lines navigating the canal; in short, without fear or favor the United States must prepare to enforce poenalization and discipline within its sovereign territory upon United States citizen and alien alike, or else provoke the just wrath and indignation of its citizens and the silent contempt of foreign nations.

This is clearly the position when stripped of all circumlocution and evasion, and we hope that those whom Mr. Jayne has addressed and Mr. R. P. Schwerin, vice-president and general manager of the Pacific Mail Company, whose great company, which has struggled throughout the past years, against adverse conditions, adverse legislation, gross public misrepresentations, and which has incidentally expended and lost large sums of money to maintain the American flag on a few great international trade routes, will insist that such an anomaly, such a disregard of national and inherent rights, are swept aside, even though the "diplomatic heavens fall" in the process.

A director of a prominent British steamship line, which has under consideration extending its services to the Pacific Coast, and who evidently has the gift of saying "much in little," writes: "I have just read with interest the





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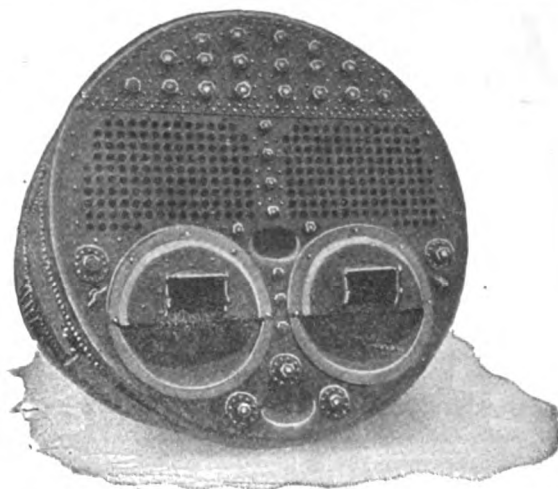
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articles pertaining to the Panama Canal in the April issue of the Pacific Marine Review. If vessels belonging to lines which have conference arrangements are to be pro-

hibited from using the canal—whether they are American or foreign—I fear the Panama Canal will have somewhat of a dearth of traffic.”  
E. F.

## SHIPPING IN CONGRESS

**N**OTHING less than forty-six bills affecting shipping in general and steam vessels in particular are before Congress, some of which, if passed, are impossible to comply with on account of their utter impracticability. It is quite out of the question to mention all and impossible to make even comments on the most deserving number of these bills, but the one which appears to me most vicious and full of retroactive measures, having passed the committee of merchant marine and fisheries, is H. R. No. 23673, the amended Wilson bill of April 23, 1912, pending now before the House.

In our May issue we took decided steps to prove our justified objections to the passage of such absolutely uncalled for procedure. It does seem that this bill is intended not only to practically annihilate the indeed pitiful number of American ships remaining, and employed in the foreign trade, but to hamper our coast shipping to no small extent and to inflict a severe blow to vessels under foreign flag, coming to our shores and keeping up the necessary over-sea commerce, which is essential for the welfare of the nation, and which we, on account of just such pitiful legislation, have prevented under the American flag. Members of the House who favor such retroactive measures indeed show their direct opposition to the upbuilding of our marine interests for which every patriotic American strives. The Pacific Marine Review is of the opinion that our country is assuming a ridiculous and uncalled for task to tell foreign nations how they should man their ships, what agreements they should enter into with their men and how their men should be paid and what language the crew should speak on vessels under foreign flags coming to our ports. Since Congress has by injudicious legislation driven our ships off the ocean, we are now actually trying to regulate and to control the vessels of other maritime nations for no other purpose than to favor the consolidation of sailor unions the world over. What are we coming to? Are we to empower a dozen irresponsible men in the case of strikes and labor disputes to tie up the entire shipping of this great nation? Just imagine the result when a member of a labor union, “any citizen of the United States,” is permitted by sworn information to compel a collector of customs to refuse clearance to a vessel until a muster is called to investigate whether such vessel has complied with the ridiculous rules as set forth in this, to say the least, vicious bill. Is it at all likely that foreign nations will submit to such proposed rulings, touching international importance, which would necessitate the revision of our existing treaties? I think not.

S. 3815—Continuous wireless watch bill. Passed both branches of Congress and is now before the conference committee.

S. 6412—Wireless regulation bill. Passed the Senate, reported to the House of Representatives, and is now awaiting consideration of the House of Representatives.

S. 6930—Maintenance of actions for death on the high seas and other navigable waters. Similar to H. R. 24764, introduced in the House of Representatives by Mr. Peters on May 22d. No action taken on either of these bills.

H. R. 25102—No action taken.

H. R. 21969—Now before the Senate committee on inter-oceanic canals.

H. R. 22826—Now before the House of Representatives for consideration.

H. R. 23001—No action taken.

H. R. 23067—Now before the House of Representatives for consideration.

H. R. 23470—Referred to the Senate committee on the judiciary.

H. R. 23673—Before the House of Representatives for consideration.

H. R. 23676—Before the House of Representatives for consideration.

H. Res. 425—Agreed to by the House of Representatives March 5th.

A number of bills have been introduced on account of the Titanic disaster.

H. R. 24025 is before the House of Representatives at the present time.

H. J. Res. 299 is before the Senate committee on foreign relations.

S. 6976, S. 7028 and H. R. 25076 are receiving consideration by the Senate committee on commerce and the House committee on merchant marine respectively.

Bill S. 7038, introduced by Mr. Nelson, and bill H. R. 25076, introduced by Mr. Alexander, chairman of the committee of merchant marine and fisheries in the House, are absolutely identical, to promote the safety of ocean navigation, containing many excellent paragraphs, of which, however, some show a marked similarity to British Board of Trade regulations now in existence. However, before either of these bills pass for final adoption, I trust an international agreement will exceed these wants in thorough conformity with and to the benefit of all maritime nations of the world alike.

“Radio Apparatus and Operators,” included in the Alexander bill, has passed the House unanimously, requiring complete wireless equipment on all vessels carrying more than fifty passengers and plying between ports two hundred miles or more apart. This measure has already passed the Senate, and under its provisions such vessels must carry at least two wireless operators, one to be on duty at all times. An auxiliary power supply independent of the vessel's main electric power must be provided as a part of the wireless equipment. The act becomes effective on ocean-going vessels October 1, 1912, and on vessels of the Great Lakes April 1, 1913.

The Humphrey bill, having for its object the closing of American ports to all vessels violating the Sherman anti-trust law, was unanimously passed by the House. This measure, originating in the Department of Justice in Washington, has for its aim to break the alleged combination of foreign shipping lines which have monopolized the North Atlantic and South American trade for some years. It provides that no vessel, foreign or domestic, which is owned by any line as party to this combination shall be permitted to enter or clear an American port. The courts may prevent such entrance or clearance, and process may issue to attach the vessel in order to collect the penalty of \$25,000 which is imposed through the violation of this proposed act. Mail contracts enjoyed by such steamship lines found guilty of the violation of the Sherman act are authorized to be canceled by the Postmaster-General.  
E. F.

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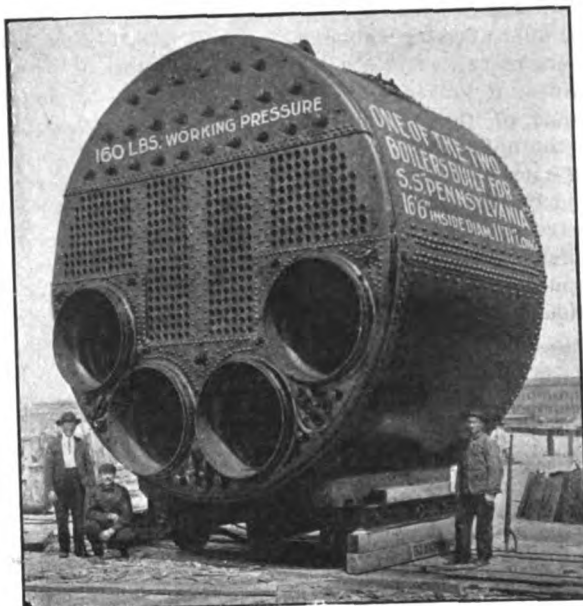
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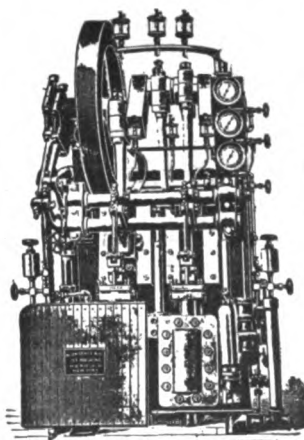
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## REPUBLICAN AND DEMOCRATIC PROGRAMS

### REPUBLICAN PLATFORM

We do not hesitate to denounce this programme as disappointing both as regards vague and indefinite reference to shipping legislation and weakness in tariff reform. We quote the subjoined extracts:

#### The Tariff

We reaffirm our belief in a protective tariff. The Republican tariff policy has been of the greatest benefit to the country, developing our resources, diversifying our industries and protecting our workmen against competition with cheaper labor abroad, thus establishing for our wage earners the American standard of living. The protective tariff is so woven into the fabric of our industrial and agricultural life that to substitute for it a tariff for revenue only would destroy many industries and throw millions of our people out of work. The products of the farm and the mines should receive the same measure of protection as other products of American labor.

We hold that the import duties should be high enough, while yielding a sufficient revenue, to protect adequately American industries and wages. Some of the existing import duties are too high and should be reduced. Readjustment should be made from time to time to conform to changed conditions and to reduce excessive rates, but without injury to American industry. To accomplish this, correct information is indispensable. This information can best be obtained by an expert commission, as the large volume of useful facts contained in the recent reports of the tariff board has demonstrated.

The pronounced feature of modern industrial life is its self-diversification. To apply tariff rates justly to these changing conditions requires closer study and more scientific methods than ever before. The Republican party has shown by its creation of the tariff board its recognition of this situation and its determination to be equal to it.

We condemn the Democratic party for its failure either to provide funds for the continuance of this board or to make other provision for securing the information requisite for intelligent tariff legislation. We protest against the Democratic method of legislating on these vitally important subjects without careful investigation.

We condemn the Democratic tariff bills passed by the House of Representatives in the Sixty-second Congress as sectional, as injurious to the public credit and as destroying business enterprise.

#### Merchant Marine

We believe that one of the country's most urgent needs is a revived merchant marine. There should be American ships, and plenty of them, to make use of the great American interoceanic canal now nearing completion.

#### Rivers and Harbors

We favor a liberal and systematic policy for the improvement of our rivers and harbors. Such improvements should be made upon expert information and after a careful comparison of cost and prospective benefits.

### DEMOCRATIC PLATFORM

In general this is more definite and satisfactory to the country at large than the Republican platform, from which we quote above.

The definite democratic declarations of immediate downward revision in tariff duties is to be preferred to the indefinite and hesitating republican declaration. As we have for years contended, prices throughout the United States are too high and a fall in prices is inevitable and cannot be deferred much longer. We do not wish to be misunderstood as favoring violent or drastic tariff revision, but we certainly favor and are satisfied

that the majority of United States citizens favor the subjoined extract from the democratic platform:

#### Downward Revision Favored

"We favor the immediate downward revision of the existing high, and in many cases prohibitive, tariff duties, insisting that material reductions be speedily made upon the necessities of life.

Articles entering into competition with the trust-controlled products, and articles of American manufacture which are sold abroad more cheaply than at home should be put upon the free list.

We recognize that our system of tariff taxation is intimately connected with the business of the country and we favor the ultimate attainment of the principles we advocate by legislation that will not injure or destroy legitimate industry.

We denounce the action of President Taft in vetoing the bills to reduce the tariff in the cotton, woolen, metals and chemicals schedules and the farmers' free list bill, all of which were designed to give immediate relief to the masses from the exactions of the trusts.

The republican party, while promising tariff revision, has shown by its tariff legislation that such revision is not to be in the people's interests, and having been faithless to its pledges of 1908, it should no longer enjoy the confidence of the nation. We appeal to the American people to support us in our demand for a tariff for revenue only.

#### High Cost of Living

The high cost of living is a serious problem in every American home. The republican party, in its platform, attempts to escape from responsibility for present conditions by denying that they are due to protective tariff. We take issue with them on this subject and charge that excessive prices result in a large measure from the high tariff laws enacted and maintained by the republican party and from trusts and commercial conspiracies fostered and encouraged by such laws, and we assert that no substantial relief can be obtained for the people until import duties on the necessities of life are materially reduced and those conspiracies broken up."

As we have frequently and consistently contended for years past, high prices and high tariffs directly and indirectly cripple the American shipping industry in the foreign trade by high costs of construction with attaching fixed charges and by reduction of homeward import cargoes.

The democratic declarations in regard to shipping legislation are a little more definite, but still unsatisfactory, than the republican declaration.

Personally, we are in favor, if not to the extent of complete exemption, of a preference in tolls for all American steamers navigating the Panama Canal, obviously exemption is more needed by American registers engaged in the foreign trade than in the domestic trade, in fact, it is no secret that the principal steamship owners engaged in the domestic trades admit that they could well afford to pay reasonable tolls. Either all American steamers engaged both in domestic and foreign trades should be exempt, to accomplish which foreign treaties should be denounced, or a reasonable toll should be collected on steamers in the domestic trades.

If, as some extremists seem to think, it is necessary, in order to secure adequate competition with transcontinental rail lines, to forbid the canal to railway owned and controlled steamship lines and to exempt steamship lines engaged in domestic trades from payments of tolls, why don't these extremists carry their contentions to the logical conclusion and advocate the admission of foreign



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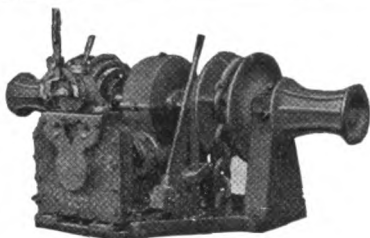
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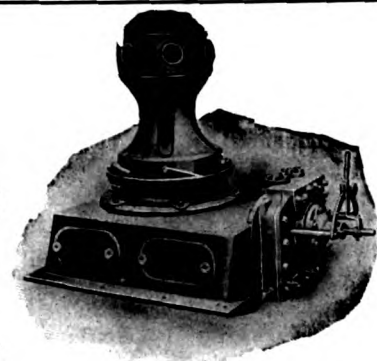
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registers into the trade between the Atlantic and Pacific coasts.

Personally, I fear this will be the final result of the exclusion of railway controlled lines, as, with the exception of the American Hawaiian Company, few, if any, owners are in a position to provide the necessary equipment. It is not impossible that when the canal is first opened, more traffic will be offered than domestic lines can handle and that public clamor will demand the relief of foreign tonnage. Before legislation decides to exclude

railway controlled tonnage, in short, the Pacific Mail Steamship Company to possibly later be fixed to accept the disastrous competition of foreign tonnage, let republicans and democrats remember that transcontinental rail lines are national and international assets before they recklessly and even viciously destroy their foundations and securities.

By all means reserve control of rates, but exclusion on such general terms is unconstitutional and dangerous.

H. B. JAYNE.

## RULINGS OF BOARD OF SUPERVISING INSPECTORS OF STEAM VESSELS CAUSE RESENTMENT

The subjoined rulings, and correspondence in reference to such, are of vital importance to our shipping interests on Puget Sound and adjacent waters.

The Pacific Marine Review can but fully coincide with the view taken by Captain H. B. Lovejoy, as well as the Commercial Club of Seattle, which will in the shortest time possible be followed by similar action by the Transportation Bureau of the Chamber of Commerce.

I have in previous articles expressed my views in general as to the headlong making of new and one-sided rulings, requiring boatable to accommodate every passenger on board, in trades not hampered by ice at any time of the year and omitting to make rulings concerning gasoline boats in charge of unlicensed men, carrying passengers in these waters, on which, in case of accident, those on board must rely for life saving on life belts only and on other steamers to come to their assistance, which are compelled to carry lifeboats, collapsible boats and life rafts, beside the necessary number of life belts. Are such rulings just? Although the Honorable Secretary of the Department of Commerce and Labor has approved these inadequate and overburdening rules, an early amendment is requested and looked forward to with eagerness by all interested for the further development, and not hindrance, of our water borne transportation, which transportation is absolutely essential and for which these waters are particularly well fitted. The ruling in question follows.—Ed. Note.

"Lake, bay and sound steamers carrying passengers must be equipped with sufficient lifeboat and liferaft capacity to accommodate at one time all persons on board, including passengers and crew; provided, however, that such steamers navigating during the interval from the 15th day of May to the 15th day of September, in any one year, both dates inclusive, will be required to be equipped with only such lifeboat and liferaft capacity as will be sufficient to accommodate at one time at least 30 per centum of all persons on board, including passengers and crew; provided, further, that such steamers navigating routes lying at all points within a distance of five miles from land, or over water whose depth is not sufficient to submerge the vessel in case of disaster, will, during the interval from the 15th day of May to the 15th day of September, in any one year, both dates inclusive, be required to be equipped with only such lifeboat and liferaft capacity as will be sufficient to accommodate at one time at least 10 per centum of all persons on board, including passengers and crew. Three-fourths of the lifeboat and liferaft equipment required on lake, bay and sound steamers may be in approved liferafts or approved collapsible lifeboats."

July 9th, 1912.

Pacific Marine Review,  
Seattle, Wash.

Gentlemen:

In regard to the ruling of Supervising Inspectors under date of June 14th, taking effect July 1st, 1912, I believe

a careful investigation of the steamboat laws governing this district, particularly those pertaining to gasoline boats under 15 tons and steamboats under 65 feet, would show inconsistencies and room for betterment, but I also believe this latest edition to our code will absolutely defeat the object aimed at, the safeguarding of the traveling public, and work a great hardship on the capital invested in the local passenger fleet. The boats that are now handling this business are safe, speedy and comfortable, and have never yet in the history of this district, so far as the writer knows, lost a passenger for the want of equipment.

Owners are doing this business on a very low rate, seldom exceeding 1½ cents per mile and of necessity carrying a large number of people, but at the best paying small returns on the investment. Not any of these boats can be equipped under the new ruling to carry more than one-third of the number of passengers now allowed, after September 15th, 1912.

Taking these statements as approximately correct, the outlook does not appeal to the steamship man, and it will appeal as little to the traveling public when the effect of this law is realized. We certainly cannot run our boats on one-third of the business we are now doing, at the present rate. Lines paralleled by Interurban trains will find it hard to raise their rates and hold their trade.

The local points near our cities, built up by our fast steamers and low rates, have a more serious competition in the unlicensed gasoline boat under 15 tons, which can carry an unlimited amount of passengers without licensed men or life saving equipment other than life preservers.

I have all reasons to believe that if this ruling takes effect these boats will carry the people in the future. Will any sane man call this a betterment for the public or for the steamer tied up and depreciating at an alarming rate? Such ruling might be beneficial in some parts of the United States, but certainly not on Puget Sound, where it is impossible to get over four miles from land and where the temperature of the water four feet below the surface varies but two degrees throughout the entire year.

A local breeze, unnoticed on our present steamers, would be a serious menace to an overloaded gasoline boat, and a fire on the latter would probably mean the loss of every soul on board. Serious accidents are sure to follow if even a part of the present business was transferred to unlicensed boats.

It would seem to me that if a boat built and equipped according to laws which have proved safe and satisfactory on Puget Sound, such boat should not be turned into a junk heap on account of an accident in the Atlantic Ocean or the people that depended on that boat for transportation be forced through ill-advised legislation to abandon their homes or travel on absolutely unsafe boats.

Our local inspectors are men above reproach with years of experience in the water transportation of this district and know the conditions here winter and summer as well as

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With these facts in view, there should be no inducement for vessel owners to experiment with unknown compounds and taking a chance of having their vessel's bottoms eaten and destroyed by the Terebo worm and coated with barnacles, sea grass, etc.

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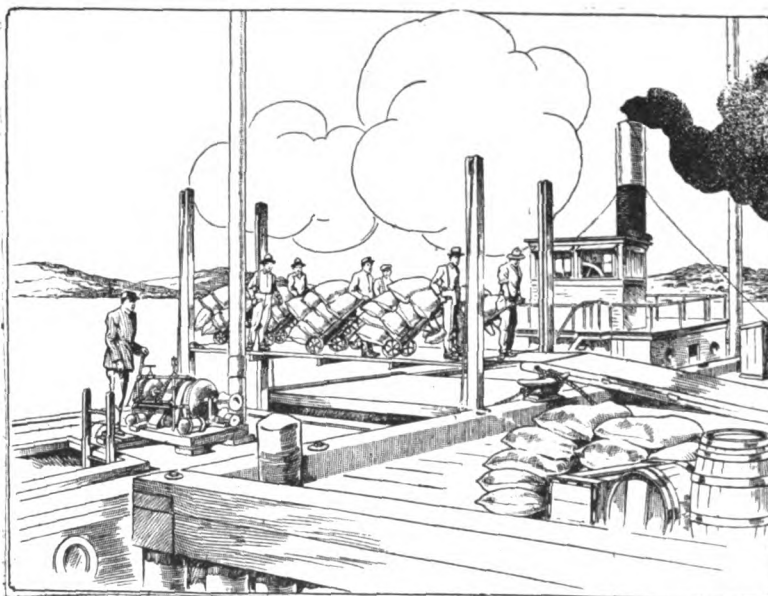
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it is possible to know them. I presume the same would apply to other local districts. Why not have the local inspectors of the respective districts suggest amendments to laws that seem defective and submit such to the Supervising Inspector at Washington?

A copy of the resolution passed by the Seattle Commercial Club appears herewith. Respectfully yours,

(Signed) H. B. LOVEJOY.

Believing that the enforcement of the new regulations approved June 14th, 1912, by the Board of Supervising Inspectors relating to boat equipment of local steamboats,

would inflict a great and irreparable damage to steamship owners and operators, resulting in some cases in practically a confiscation of property, indirectly in great damage to the transportation business on Puget Sound by forcing steamers out of business, and the necessary result being an increase in the price of transportation, thereby inflicting great loss and inconvenience to the traveling public.

Therefore be it resolved by the Seattle Commercial Club that the said Board of Supervising Inspectors be, and they hereby are requested and urged to rescind and revoke the said regulation.

## LIGHTED BUOYS

(Papers presented at the International Congress of Navigation at Philadelphia, May, 1912; general report, by G. R. Putnam, Commissioner of Lighthouses.)

**S**IX papers have been presented—one on the general subject of safety of navigation and the others on lighted buoys and other aids to navigation. Several of the latter papers are, in effect, descriptions of the lighthouse services and systems of the respective countries.

The report of Mr. G. de Joly, chief engineer of Central Service of Lighthouses and Beacons of France, deals with the illumination of the coasts of that country by gas-lighted buoys and by light vessels.

Buoys lighted by electricity or by mineral oil have not been used, but oil-gas buoys have been extensively employed.

In order to increase the luminous intensity all of the oil-lighted buoys have upright incandescent mantles. This form of mantle, made of artificial silk, has been found preferable in the French service.

Some coal-gas buoys have been used recently. Tests have been made with Blau gas, but the difference in efficiency does not warrant the French service in abandoning their present oil-gas plants. Acetylene gas has not been adopted for buoys in France, but it is used for some beacons, with mantles to give an incandescent light. The life of the mantle has been found very much less than with oil gas.

A description is given of several lightships without crews and using gas illumination. An automatic clockwork to control the supply of gas has been applied on these ships as well as to certain lighted beacons.

A report of the lighted buoys of the Prussian coast is furnished by Herr Regierungsbaumeister Braum, of Berlin. For these buoys oil gas and more recently Blau gas have been used, the latter being preferred. A few buoys have been lighted electrically or with petroleum. Experiments are being made on the treble mirror, which has the property of reflecting back a beam of light falling on it. Several of these mirrors mounted on a buoy cause it to be visible at a distance of several sea miles by ships carrying searchlights. Suspended gas mantles are preferred. If occasion requires, the lighted buoys are fitted with fog signals, either bell or whistle. There has been in use for over a year a lighted buoy having a submarine bell worked by gas pressure from the buoy, and an unwatched lightship is now being fitted with a similar submarine signal. Extensive tests are being made of the mooring chain for buoys. A description is given of the manufacture of oil gas and Blau gas.

The paper of Mr. D. A. Stevenson, of Edinburgh, engineer to the Commissioner of Northern Lighthouses, Scotland, states that the lighted buoy is the greatest aid to navigation produced during recent years. Some waterways, as, for instance, the Clyde, are now lighted like a street at night. Some history is given of the development

of gas buoys, and mention is made of all different types of gas buoys, including the various kinds of acetylene buoys. Reference is also made to unmanned vessels having gas lights. Mention is made of the various types of flashing mechanism in connection with gas buoys, and the writer states that an automatic acetylene fog gun has lately been introduced in which the consumption of gas does not exceed that of an ordinary gas-lighted buoy, and the flash from the gun may also be used as the light for the buoy or beacon.

Mr. van Braam van Vloten, engineer to the Lighting Service of Holland, furnishes a paper on the lighting of that coast. A general description is given of the organization of the service of lighting and buoying the coasts of Holland.

In 1906 a plan was approved for the improvement of the lighting of the Dutch coast which had previously been mainly by fixed or flash lights, using petroleum wick lamps. Four of the most important coast lights have been reconstructed with electric flash lights, and eight other lighthouses have been fitted with incandescent oil-vapor lights. The illumination on several of the lightships has also been improved. A description is given of the new depot for lighthouse work, constructed in the vicinity of Scheveningen, where various investigations have been carried on. A special distillate, under the name of "Pharoline," has been developed, and is now supplied for the lighting of the lighthouses on the coasts of Holland. A mantle has been developed, made of artificial silk, and supplied to lighthouses in a noncarbonized state, being carbonized in position on the lamp by burning.

It is proposed to improve the 130 fixed secondary lights by introducing either rich or Blau gas and giving them suitable characteristics. A clockwork for lighting and extinguishing the flame has been fitted to some lights.

There are 95 lighted buoys on the Dutch coast, all on the Pintsch system, and many of them are fitted with incandescent mantles.

Observations have been made of the visibility of lights. They prove the fallacy of the frequently repeated statement that the old petroleum lights penetrate through the fog better than the electric flash light.

Some details are given regarding lighthouse towers, and it is stated that iron towers give satisfaction, with little cost for maintenance. Details are given as to a new tower constructed of reinforced concrete at small cost.

A paper on the automatic lighting of lighthouses, lightships, and light buoys in Sweden is presented by Mr. Gronvall, chief engineer in the Lighthouse Service of Sweden.

On account of the intricate coast the Swedish Lighthouse Department has endeavored to develop a system



for automatic lighting at stations where fog signals, or a very strong light, are not needed. Pintsch buoys and calcium carbide buoys have been tried. Difficulties, which were found, were obviated by the use of the French invention of dissolved acetylene gas, the first trial in a buoy being in 1904. An apparatus for giving intermittent lights was invented by Engineer Dalen. The advantage of this arrangement is the light characteristic and the saving in gas. Ordinarily about one-tenth of the gas is consumed that would be required for a continuous light. Engineer Dalen has also invented a sun valve which automatically opens and closes the gas supply in the evening and morning and saves about 30 per cent of the gas. Details are given as to gas consumption and the capacity of the gas accumulators for different classes of aids to navigation. The lanterns have been improved by an arrangement of the bars so that very little light is lost.

The Swedish lightships formerly showed only constant lights. Recently acetylene lights of from 3,000 to 4,000 candlepower have been introduced on lightships, the apparatus being suspended so that the light will always remain in nearly a vertical position.

The paper by Col. John Mills, United States Engineers, on the safety of navigation on the Great American Lakes, gives an analysis of accidents in connection with navigation on the Great Lakes of North America during the past 10 years and deduces therefrom suggestions toward greater safety of navigation. A general description is given of the water traffic on the Lakes and of the classes of vessels carrying this traffic.

The following information, not covered by the papers presented, is added by the reporter:

A clock mechanism has been introduced in the English Lighthouse Service for the purpose of turning on and cutting off the supply of gas for buoys and unattended beacons and light vessels. This clock has been in use on buoys for over a year, with satisfactory results.

The United States Lighthouse Service maintains at present 287 lighted buoys, the larger part being Pintsch gas buoys and the remainder three different types of acetylene gas buoys. The great extent of the coasts to be guarded by this service makes it desirable to use different systems, according to local conditions. The gas buoy has been found a very valuable aid to navigation, as it may be placed in locations where it would be difficult to maintain either light vessels or lighthouses. In comparison with these the original expense of installation and the expense of maintenance is small, so that for a given expenditure more valuable results can often be obtained with lighted buoys.

Fifty-five of the gas buoys are provided also with sound signals, either in the form of whistles or bells. Test is now being made of a lighted buoy having a submarine bell attachment. In this buoy the movement due to the waves imparts a vertical motion to a fin and operates to store power in a spring which, when automatically released, causes the bell to be struck. Preliminary reports from this submarine bell buoy are favorable.

It is difficult to briefly summarize the papers presented, as they cover so wide a range of information. A fact brought out is the great increase in the use of gas-lighted buoys and the value of these recently developed aids to navigation.

What a selection for aids to navigation in Alaskan waters.—Ed. Note.

Mr. H. W. Rhodes has been appointed Inspector of the Eighteenth Lighthouse District, with headquarters at San Francisco, Cal. Mr. Rhodes is a resident of California, and has had extensive experience in Pacific Coast waters while engaged in engineering work for the U. S. Coast Survey.

### SUBMARINE BELL BUOY

On October 26, 1911, a gas and whistling buoy, with submarine bell, was established on Barnegat Shoal, N. J.

The automatic submarine bell mechanism attached to this buoy is of a new type, in which the vanes operating the hammer are protected by a casing. As the buoy rises and falls on the waves these vanes are forced up and down, causing a spring to be stretched. When this spring reaches a given point it lets go and a blow is struck. As the blow is due to the elongation of the spring, which is always the same, all blows are of equal intensity, although the interval between them varies with the seaway, and therefore no code is rung. This irregularity, which is unavoidable, is not objectionable, as it distinguishes the buoy from any submarine bell on shore or light vessel which may be established in the vicinity, and which is rung at regular intervals, but only during thick and foggy weather. The bell on this buoy rings uninterruptedly and independently of the conditions of the weather.

From reports received the bell appears to be performing its functions regularly, and to be proving an efficient aid to navigation. The steamer *Almirante* reported that the bell was heard on February 14 at a distance of 17 miles, moderate sea; and it has been reported repeatedly as having been heard for distances of from 10 to 15 miles.

### Audibility of Submarine Bells

Report has recently been received that the submarine bell on Fire Island light vessel has been heard at a distance of 22 miles, and several other times at distances of over 15 miles. It would appear that the depth in which the vessel is moored, and the general uniform slope of the sea bottom, combined with the absence of shoals to interfere with the direct propagation of sound, is the cause of this unusual audibility. The distance at which a submarine bell is heard is also dependent upon the direction in which the vessel receiving the signal is heading, being greatest when that portion of the ship on which the receiving tanks are mounted is at right angles to the direction of the bell.

### FREIGHTS AND FIXTURES

We publish herewith the general monthly freight report of Messrs. Hind-Rolph & Co., San Francisco:

"Since our last report on the freight market, the most interesting feature to record is the rise in the rates of freight for sailing vessels. For example, when we last wrote you the rate for lumber to the West Coast of South America was 60/-. Since then, the rate has steadily advanced from 61/3 to 62/6 and 63/9 has now been paid, and, for the remaining tonnage, owners are holding out for at least, 65/- and look like getting it.

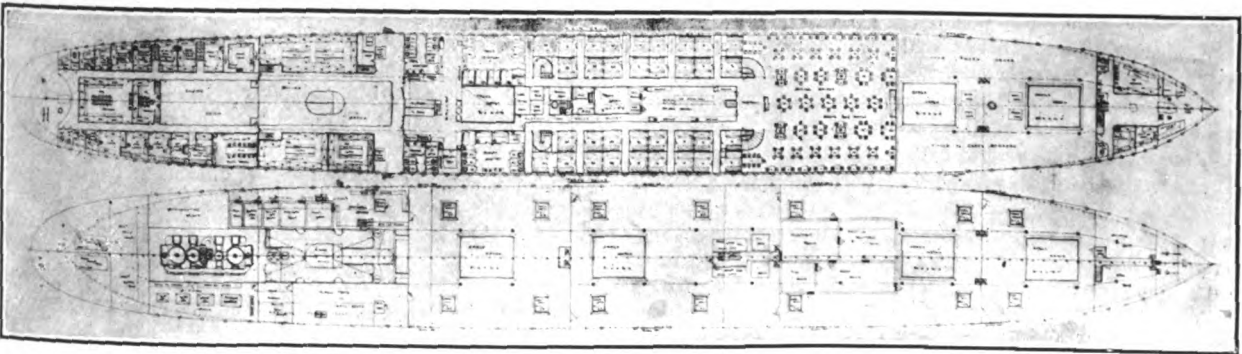
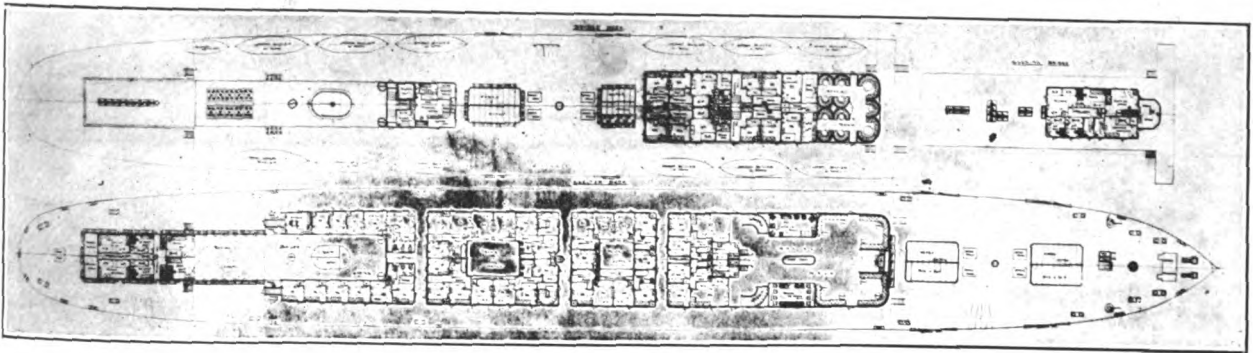
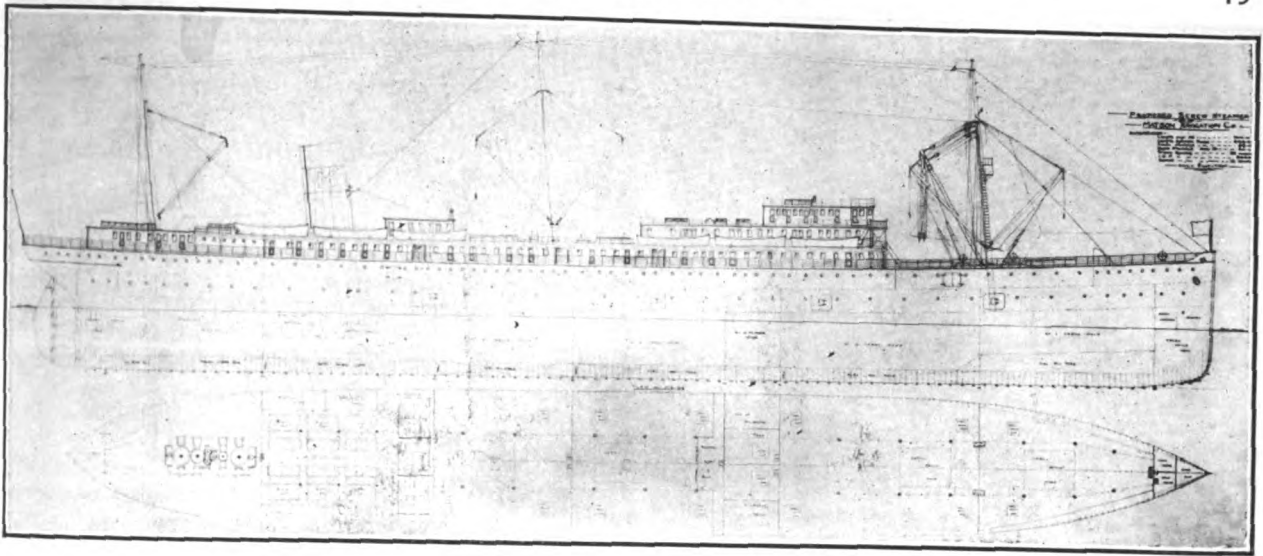
"The lumber rates for Australia are also firmer, though, in the absence of many transactions, it is difficult to say exactly what the rates are, but they are, undoubtedly, firmer.

"As regards steamers, there is not a great deal to advise. The "Kina," however, has been fixed for wheat to Europe at 42/-. and any number of sailing vessels at 40/-. this market is very strong. Time-chartered rates remain firm at nominally 7/-. with an upward tendency.

### Fixtures

"The following are the most interesting sail fixtures:

"Forester," lumber, Valparaiso f. o., Pisagua range, 51/3; "W. H. Talbot," "Balboa," "Mindoro," "Luzon" and "Churchill" for the same voyage at 62/6, and the "Carrier Dove" at 63/9."



## MATSON NAVIGATION COMPANY TO HAVE NEW STEAMER

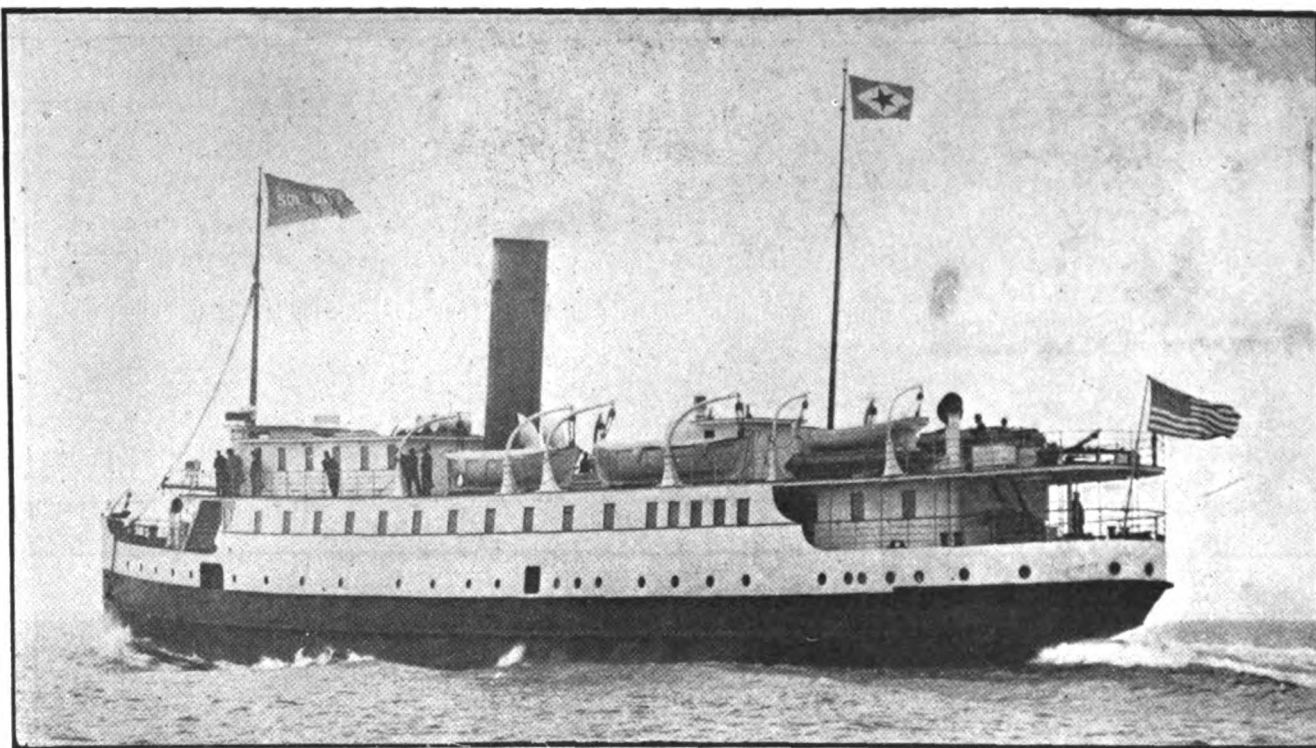
The Newport News Shipbuilding Company has commenced construction on a new steamer for the Matson Navigation Company of San Francisco, Calif., to be of the following dimensions: Length over all, 500 ft.; length between perpendiculars, 484 ft.; breadth moulded, 58 ft.; depth moulded to upper deck, 36 ft. 6 in.; height between decks, main and upper, 9 ft. 6 in.; height between decks, upper and shelter, 8 ft. 3 in.; rise of floor, 1 ft. 6 in.; sea speed loaded to 24 ft. draft, 16 knots; displacement, 24 ft. draft, long tons, about 13,500.

This vessel will be built to 100A at Lloyd's Special Survey and according to the three-deck rule with a full shelter deck. Her boiler battery consists of six Babcock & Wilcox boilers and three Scotch boilers. The Scotch boilers are to be used for steaming at sea and as donkey boilers in port.

The new vessel will have a four-cylinder triple expansion engine of approximately 9,000 h. p., the cylinders being 35 in., 61 in., 81 in., 81-66 in. stroke.

This steamer will cost approximately \$1,350,000 and will be an oil burner.

The Craig Shipbuilding Company, of Long Beach, Cal., has been awarded a contract by the Robert Dollar Company for the construction of a steamer to be called the "Grace Dollar," which is to be of the following dimensions: Length O. A., 224 feet; length B. P., 216; beam, 40; depth, moulded, 16; depth of hold, 13; draft, loaded, 16. The "Grace Dollar" is to be fitted with two compound engines, 30x30x24 inch, developing 900 horsepower, and will have a speed of 10½ knots. This vessel's lumber capacity will be 1,200,000 feet.



### SS. "SOL DUC" ON TRIAL TRIP

The single screw steel passenger steamer "Sol Duc" recently completed by the Seattle Construction & Drydock Company and since June 30, 1912, turned over to her owners, the Inland Navigation Company, accomplished on the above mentioned date a most successful and creditable trial trip, proving herself not only a credit to the builders and owners, but an asset to the city of Seattle. The trial trip consisted of four double runs on the measured mile, made with and against the tide, eight runs in all and the endurance run. The best average speed obtained was sixteen knots, the engines developing approximately 1,430 i. h. p.

The engine of the triple expansion type works with sewing machine exactness and no vibration in any part of the ship is noticeable. The S. S. Sol Duc is a handsomely fitted passenger steamer, of steel construction throughout making her practically fireproof and in the writer's opinion, is in regards to space the most deceiving ship of her type. Alongside the dock, although the ship is 205 feet in length, one cannot conceive her spaciousness inside, which when on board is remarkably surprising.

Her dimensions as previously recorded are:

Length overall .....	205' 0"
Beam .....	32' 0"
Depth .....	14' 3"
Gross tonnage .....	1085 tons

Several additional new vessels are under construction at the Seattle Construction & Drydock Company's plant. The steamer "Potlatch," being built for the Inland Navigation Company, is rapidly nearing completion and will be launched probably on the 18th of July. Rapid progress is being made on the steel sea-going suction dredge "Col. P. S. Michie," which is constructing for the United States government for operation at Coos Bay, Ore. Work on the new steel passenger steamer "Tacoma," building for the Inland Navigation Company, is progressing rapidly. The U. S. submarine "F3" has now successfully completed the tests required by the navy department and will be turned over to the government in the very near future. The tests for the submarine "F4" will commence during

this month. Rapid progress is being made on the submarines "H3" and "K4," which are also being built for the government of the United States. The work for the two submarines being built at this plant for the Chilean government is well under way.

### NEW VESSELS FOR HAMMOND LUMBER COMPANY

The Hamomnd Lumber Company has two vessels under construction for its service, one of steel at the yards of the Craig Shipbuilding Company at Long Beach and one of wood at Eureka, Humboldt Bay. It is the intention of the Hammond Lumber Company to operate the new steel vessel in the lumber trade from Astoria, Ore., to San Pedro, Cal. The steamers now in operation by this company are the "George W. Fenwick," "General Hubbard" and the "Ravalli."

### CHICAGO, MILWAUKEE & PUGET SOUND RAILWAY COMPANY INAUGURATES FERRY SERVICE

The operation of a car ferry service between Seattle and Bellingham, similar to that in operation between Seattle and Ballard, has been decided upon by the Chicago, Milwaukee & Puget Sound Railway Company. The service will begin with one twelve-car capacity barge, and if sufficient business is offered to justify the tug will haul two barges on each trip, or twenty-four cars. More tugs and barges will be provided as the business demands. This line will be operated by the Milwaukee Terminal Company the same as their barge lines on the Sound. Suitable landing and a bridge has been constructed on the waterfront property of the Belilingham Bay & British Columbia Railroad at Bellingham, and their engines will switch the cars to and from the various industries and connections.

The S. S. "Camino," built by the Craig Shipbuilding Company, of Long Beach, Cal., for Swayne & Holt, was successfully launched on June 24. The new steamer is fitted for carrying one hundred passengers and will be engaged in the coastwise trade between Puget Sound ports, San Francisco and San Pedro. The "Camino," 308 feet in length, is designed to carry 2,500,000 feet of lumber.

TEHUANTEPEC NATIONAL RAILWAY COMPANY'S  
CONTINUED ACTIVITY.

**W**E are in receipt of a very comprehensive report from the Tehuantepec National Railway Company concerning the recent disturbances in Mexico and their affect upon the business of this company.

They report that the political disturbances in the Republic of Mexico have been, for the greater part, confined to sections very remote from the line of this railway, and that traffic via the Tehuantepec route continues to be handled expeditiously, without interruption and in a constantly increasing volume. So far as concerns the Tehuantepec National Railway Company these unfortunate occurrences have had no appreciable effect, and no difficulty whatever is anticipated by the management in maintaining and even increasing the present high standard of efficiency.

The labor conditions at both ports and along the line of the railway are satisfactory.

No delays have been noted to vessels calling at their ports during the past year, and steamers operating on regular itineraries have been discharged and dispatched on schedule. As an indication of the manner in which this work is carried on, a few concrete examples are given herewith:

## At Salina Cruz

Steamer and date—	Discharged tons D.W.	Loaded tons D.W.
"Alaskan," April 4-14 .....	12,326	7,158
"Nevadan," April 7-18 .....	4,433	4,100
"Arizonan," April 13-25 .....	12,225	7,553
"Virginian," April 23-May 5 .....	11,235	9,019
"Nebraskan," April 28-May 9 .....	4,225	4,150
"Missourian," May 3-16 .....	11,693	7,947
"Mexican," May 15-26 .....	12,228	7,911

## At Puerto, Mexico

"Georgian," April 5-20 .....	5,824	8,086
"Kentuckian," April 10-26 .....	6,186	7,252
"Oregonian," April 15-30 .....	6,466	8,148
"Texan," April 20-May 8 .....	8,627	7,488
"Kansan," April 26-May 10 .....	5,016	8,907
"Georgian," May 18-31 .....	7,018	7,984

The eastward movement is sugar and general merchandise and will average about 60 cubic feet to the ton. The westbound movement is general merchandise, measuring 80 cubic feet to the ton.

Traffic via this route has shown a steady increase annually during the five years the Tehuantepec National Railway has been open to through business. Something more than a million tons dead weight of commercial freight passed over the line during the calendar year 1911, and from present indications this figure will be considerably exceeded in 1912.

## SUEZ CANAL OPERATIONS

The annual meeting of the Suez Canal Co. was held on June 3. The annual report showed that the year's operations had been brilliantly successful. The total receipts were \$26,870,516, an increase of \$843,656 over the previous year. This result exceeded all expectations, the loss entailed by the reduction of 10 cents per ton in the tariff being far more than made good, and justified a similar reduction to come into force on January 1, 1913. Thus, in three years, the tariff will have been lowered by 20 per cent.

After appropriating \$543,019 to the statutory reserve (making total \$6,747,915) and \$584,000 to the extraordinary reserve (making total \$1,549,000), the directors proposed to distribute \$16,950,112 (against \$15,908,419 in 1910), carrying forward \$66,000 (against \$42,114). In the statutory division of profits 71 per cent goes to stockholders, 15 per cent to the Egyptian Government, 10 per cent to the founders of the company, 2 per cent to the administrative officers, and 2 per cent to the employees.

The number of vessels that passed through the canal in 1911 was 4,969, representing a net tonnage of 18,324,794, an increase of 436 vessels, with a tonnage of 1,742,896.

From the following list of the six leading steamship lines traversing the Suez Canal it will be seen that the Ellerman Lines again had the greatest number of voyages:

Owners—	Tonnage.	No. of voyages.
Peninsular and Oriental .....	1,205,000	244
Ellerman Lines .....	1,158,200	286
Alfred Holt & Co. ....	1,002,800	224
Hansa Line .....	847,600	215
Messageries Maritimes .....	603,400	172
Norddeutscher Lloyd .....	595,200	102

In recent years the rapidity and safety of transit have been greatly enhanced. A significant illustration was afforded by the passage of the royal yacht conveying the King and Queen to and from India. The transits occupied only 12½ and 12 hours, respectively. Referring to the contributing sources of traffic, the report states that there was a falling off in cargoes of rice, of oleaginous grains, and still more notably of soya beans, the trade in which practically ceased owing to the plague in Manchuria. Again, business with China, from which such great things are expected in the future, was much hampered by the unsettled state of the country politically. On the other hand, there was great activity in the export trade of India, the consignments of grain reaching a figure never attained before. Trade with the Dutch Indies also developed largely, while Japan continued to extend commercial relations with Europe. Australia and the Oceanic Isles likewise contributed to the increased traffic. Brilliant as were the results of 1911, they have been more than maintained in the opening months of the present year.

The directors of the Suez Canal Co. state that they have decided to reduce their tariff to shipowners, as from the commencement of next year from 6.75 francs (\$1.30) to 6.227 francs (\$1.20) per ton.

WHARFAGE DUES REDUCED AT PORT OF  
SAN FRANCISCO

Relative to the deduction of wharfage dues at the Port of San Francisco, the Secretary of the State Board of Harbor Commissioners sends us the following information:

"Up to October 1, 1911, the shippers holding regularly assigned berths were paying for same at the rate of 50c per linear foot of space. On the date above referred to, this board reduced the rate by 10 per cent, making a monthly rental charge for berth space 45c per linear foot.

"The rental paid for these assignments assures the shipping people of a berth for their vessels at any time that they enter this port; but in addition to this rate of 45c per linear foot, the vessel's owner must pay the regular dockage and toll charges."

C. P. R. "EMPRESS OF CHINA" SOLD BY THE  
UNDERWRITERS

The "Empress of China," which went ashore June 26th, 1912, on Shirahama reef, at Japan, has been sold by the underwriters for \$65,000 to a copper and iron dealer of Yokohama.

A number of bidders sought to purchase the steamer, including foreign both firms and Japanese shipowners, the highest price offered by the shipowners being \$60,000. It was estimated that between \$150,000 and \$200,000 was required to prepare the vessel for sea.

The "Empress of China" passed out of the hands of the Canadian Pacific Railway Co., her owners, soon after she was floated by the underwriters, a special representative of the Liverpool Salvage Association being sent from the United Kingdom to superintend the work, which was carried out by the Mitsui Bishi Dock Company, of Nagasaki.



## CHINESE INTERNATIONAL LOAN \$300,000,000--WHAT IT PORTENDS

THE most important recent event, we may consistently state epoch-marking event, in the financial markets, is the execution in Paris, June 22, of the six Power—United States, Great Britain, Germany, France, Russia, Japan-Chinese—international loan of \$300,000,000.

Personally the writer, although engaged in the negotiation of minor loans and not presuming to identify himself with such exalted financiers, believes in the principle, regardless of selfish interests, that all countries should in taxation prefer capital invested in domestic industries and tax more heavily capital invested in foreign industries.

As the writer has consistently contended for the past seven years, the greatest contest the world must face, entirely overshadowing military and naval contests, is the contest between the low cost of production on the Eastern Hemisphere and the high cost of production on the Western Hemisphere, a contest which will be most severely felt in the United States, unless costs of production can be reduced by reasonable reduction in tariffs, dispersed of exaggerated trusts, etc.

This universal contest this loan will obviously hasten, and it can only be deferred as long as the present uncertainty continues in China, as to quiet possession of property and enforcement of contracts. The point the writer seeks to make is this: A few large issuing houses and banks will make from 1 per cent to possibly  $1\frac{1}{2}$  per cent or even 2 per cent (in view of uncertainties in China) on the issue of this loan (possibly  $2\frac{1}{2}$  to 5 per cent on some of its subsequent expenditures), which they will unload upon the public and population of their respective countries. This loan will enable China to commence her industrial emancipation and eventually to provide most serious competition in the markets of the world. I do not advocate suppression of these loans or attachment of impossible conditions, but I advocate and suggest for the consideration of cabinets in London—particularly Chancellor of the Exchequer, Lloyd George—cabinets in Paris, cabinets in Berlin, cabinets in Washington (financial committees), etc., exemption or reduced taxation of capital invested in domestic industries and increased taxation of capital invested in foreign industries. This would solve many problems of domestic unemployment and unrest. As a rule, with few exceptions, the great international issuing houses domiciled in their respective countries hold comparatively insignificant domestic interests and shrink from bearing their proportion of domestic difficulties and burdens, preferring the more tempting and remunerative fields of foreign operation.

In order to provide markets for their loans, as these issuing houses, underwriters, etc., always consider a loan a failure unless they successfully unload on the public (so that their funds are released for the underwriting of the next loan), these issuing houses have become a most vicious force in stirring up domestic discontent and dissatisfaction with domestic investments, and issuing houses, brokers, etc., combine to disparage domestic investments and to recommend foreign investments to their clients.

France, with its higher taxes upon foreign debenture issues, is perhaps the most prudent of all nations, which is reflected in the popularity of good domestic issues and the extraordinary thrift of its citizens and the stability of the rate of the Bank of France.

I have made this communication longer than I intended, but the subject is of first importance. When one remembers that many clever writers on political economy and clever writers of fiction have based a universal cataclysm of modern civilization upon a possible discovery of a mountain of gold, and the latter have related how the

great nations of the earth combined to overthrow it by high explosives to save current currency, one falters before the force of a civilized and developed China and is tempted to ask if some future generation may witness a combination of the great powers in the Western Hemisphere, seriously considering the possibility of inundating China, now subject to ravages from typhoons, by some great marine engineering work, conceived by some greater De Lesseps, obeying the great law of "self-preservation." I wonder.

Since this article was written it has been announced that China has rejected the loan in view of this proposed supervision and control demanded by the foreign powers, and that negotiations are proceeding for a smaller loan. This, however, does not alter the principal points discussed in this article.

H. B. JAYNE.

### FINANCIAL OUTLOOK IN JAPAN

THE subjoined is an extract from a speech by the chairman of an Anglo-Japanese bank, at its recent annual meeting in London.

There is one matter on which, although perhaps not directly connected with the bank, I should like to say a few words, inasmuch as it is a matter in which, in view of our large and increasing business in Japanese securities, we are indirectly interested. I refer to the financial and economic position of the Japanese Empire at the present time. That the burden to Japan of her National Debt—a large proportion of which is held abroad—is a heavy one, I should be the last to deny, but I should like to take this opportunity of publicly pointing out how little real foundation there is for many of the pessimistic reports as to her financial position which obtain wide currency at the present time. It has, for instance, been asserted in many quarters that, in spite of a much advertised annual outlay on amortisation, so far from diminishing, the total of the national indebtedness tends to increase. The pessimistic views based on these assertions are superficial, because they take no account of the causes which have given rise to them. It is true that in 1908-9 the government issued new loans for some Yen 510,000,000, but this was for the purchase of no fewer than seventeen private railway companies, thereby completing the work of railway nationalisation. It is sufficient to say that, after paying the whole of the interest on the bonds, the working of these railways shows annually a large and steadily growing surplus, to show how unreasonable it is to regard this loan as an addition to the burdens of the nation. In this connection it is satisfactory to be able to say that the progress of the railways since nationalisation has been very marked, and a comparative statement of receipts for 1910 and 1911 shows a total increase of over Yen 10,000,000 in favor of the latter year. It is true that further capital expenditure is urgently required for future development, and the government is now issuing treasury bills to provide the necessary funds, but opinion is unanimous that such expenditure will be highly remunerative, and whether financed by the issue of bonds or treasury bills or in any other way, there is not the least likelihood of it ever proving a drain on the treasury. Further, due consideration must be given to the very considerable amount of loans which have been converted to a lower rate of interest within the past few years. These conversions have in many cases caused an increase in the nominal amount of the debt, but as this is more than compensated by the reduction in the amount required for the annual service of the debt, the net result is beneficial to the nation.

A further cause of the apparent increase of the debt is due to the taking over of the existing liabilities of Korea and the issue of a further loan in connection with the development of that country. But I need scarcely say that these loans are represented by a very lucrative asset in the acquisition of the very valuable territory in question. The real facts are an apparent increase in the total of the debt from Yen 2,194,749,000 in 1906 to Yen 2,555,418,000 in 1911—say, Yen 360,000,000—but this is converted into a total decrease of Yen 172,000,000, if due allowance is made for the two factors referred to, reproductive loans and loans made for the acquisition and development of Korea; while, out for the conversion of debt to a lower rate of interest, the total decrease would have amounted to Yen 326,000,000. The net result of the financial operations over the six years in question is that an interest charge of Yen 104,447,000 in 1906 has been reduced to Yen 20,216,000 in 1911, a net annual gain to the state of some Yen 14,000,000. All that Japan requires for her economic development and the improvement of her financial condition are peace and retrenchment, and there is every reason to believe that the policy of the present government is based on these lines, as was that of their predecessors. The unsettled condition of China and the state of more or less chaos prevailing there has, of course, been a great blow to Japanese trade, and has temporarily hindered industrial expansion. Sooner or later, it is to be hoped, more settled conditions will prevail and a marked improvement of trade and industry should then be seen in Japan, of which, I need not say, we shall be ready to take full advantage. In the meantime, she is making fair progress, and the statement I have made should be sufficient to show that the pessimistic rumors which from time to time are heard as to her financial position are based on incorrect or superficial information.

#### BRITISH AMERICAN TOBACCO CO., LTD.

**I**N view of the present suits pending to dissolve the so termed "Tobacco Trust" and other trusts throughout the United States, and their disposition to take refuge by registration under the British Companies Act the subjoined, published in connection with a recent sale in London of 700,000 5 per cent preference shares of £1 each at 21s 6d per share, is interesting information as confirming the large profits earned by these great combinations.

As I have pointed out in previous financial notes, although the United States is popularly condemned as the birthplace and home of great trusts, such flourish to an equal, if not to a greater extent, in London and in other financial centers in Europe; it does not seem improbable that eventually legislation similar to legislation in the United States, illegalizing "combinations in restraint of trade" may be added to the statutes of Great Britain.

H. B. JAYNE.

The British-American Tobacco Company, Limited, was incorporated under the Companies Acts on the 29th of September, 1902, for the purpose of carrying on the business of the manufacture and sale of tobacco.

It has largely developed its business and in addition to factories in England and the United States it owns factories and depots in other parts of the world, and has also acquired shares in and promoted a number of other companies operating in various countries throughout the world.

The business is managed from London and all the directors are actively engaged in it. The present management is secured for a period of at least five years.

The company operates in close relationship with the Imperial Tobacco Company (of Great Britain and Ireland),

Limited, two of whose directors are on the board of the company.

The business has been uniformly successful and steadily progressive as is shown by the following statement of profits made and dividends paid on the ordinary shares for the past seven years:

Year ended Sept. 30th,	Audited Profits.	Dividend on Ord. shares.
1905.....	£ 711,483	12 per cent.
" " " 1906.....	751,780	14 "
" " " 1907.....	1,031,325	23 "
" " " 1908.....	1,062,729	23 "
" " " 1909.....	930,647	19½ "
" " " 1910.....	1,358,384	31 "
" " " 1911.....	1,655,880	37½ "

The amount carried forward at 30th September, 1911, after providing for the final dividend paid 30th December, 1911, was £1,168,100.

It will thus be seen that in the past year the profits of the company were sufficient to cover the preference dividend nearly 16 times.

#### ANNUAL REPORT OF P. & O. STEAM NAV. CO.

The directors of the Peninsular & Oriental Steam Navigation Company announce a dividend at the rate of 5 per cent per annum on the preferred stock, and an interim dividend at the rate of 7 per cent per annum on the deferred stock of the company for the half year ended March 31st, and that warrants for the same will be posted on the 15th instant.

The subjoined further notice in regard to a new capital issue is most significant and effectively dispells rumors and reports of an absorption by other companies, which has caused much speculation in P. & O. deferred stock during the last few months, and an advance of over 100% to its present nominal price of 400-410, at which, even assuming that 14 per cent dividend is paid for the whole year, 13 per cent having been paid during the past 10 years, it seems high.

Personally we are pleased that this old-established and well-known company does not apparently propose to sink its identity, name and reputation in a merger of doubtful value.

The terms on which this new issue is made, the 5 per cent preferred stock standing at 127½ net, but at which it only yields £3 18s per cent, practically gives a special bonus of 6 per cent to those to whom it is offered.

H. B. J.

The directors of the Peninsular & Oriental Steam Navigation Company, at their board meeting today, passed a resolution to deal with the capital unissued, viz., £1,180,000, by allotting the same to the extent of £1,160,000,000 in the form of preferred cumulative 5 per cent stock to the present holders of preferred and deferred stocks (of not less than £40), in proportion to their respective holdings of such stocks, and at the rate of £110 for each £100 of stock. This increase of capital has in view the requirements of the company's future work, in the improvement of their mail, passenger and cargo services, and has no reference whatever to any rumored "amalgamation or combine," which are, in fact, non-existent, so far as the company is aware. It may be added, in view of these rumors, that no proposition or suggestion of this character has ever been made to the directors, while, on the other hand, the company has been for many years, and is now, working in perfect harmony with their competitors, throughout the whole range of their operations in the East.

# PACIFIC MARINE REVIEW

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## RETROSPECTION

THE voluminous pamphlets comprising the hearing of the "Titanic" disaster before the subcommittee of the Committee of Commerce, U. S. Senate, have to same extent been dwelt upon in our previous issue. However, the speech of the Hon. William Alden Smith of Michigan, delivered in the Senate of the United States on May 28th, 1912, as a summary of this committee's investigation re the "Titanic" disaster, and which I received in condensed form after publication of the Pacific Marine Review's June issue, now presents itself for contemplation.

This edition de luxe of forty-four pages in book size, with cream colored cover, of which the contents are set in large display type, could have easily and less conspicuously been covered in sixteen pages by the use of ordinary type. In the writer's opinion it should never have been permitted to circulate broadcast, for truly it seeks its equal in the indulgence of the wildest flights of sentiment and rhetoric, denouncing in the intervals everybody concerned.

I much regret that Lord Mersey's decision of the British Court of Inquiry is not likely to be rendered before the Pacific Marine Review's July issue goes to press, which decision, I assume, will produce some startling comparisons to the decided disadvantage of Senator Smith's bombastic remarks. However, what can we expect as long as we entrust laymen with problems of marine affairs, so vitally concerning the first maritime nation of the world, who investigated in this particular instance the disaster of a White Star Line steamer, to which investigation, however, this company courteously submitted, notwithstanding the fact that the chairman of the committee making the inquiry proved himself utterly ignorant in merchant marine matters.

For years past and even today we have and are actually depending on maritime codes shaped by other nations. The United States laid the foundation of her navigation code after the English model, with enactments by the first and second Congresses under the constitution. Though shorn by amendments and repeals from time to time of some of its more stringent clauses, it has yet tenaciously retained the sterner principles of the original draft, which have long since been discarded by other nations and which we so willingly have copied, resulting in the regrettable decadence of offshore commerce under the American flag.

It is by this time unnecessary to remind Senator Smith

that to render conscientious and consistent reports on maritime disasters of world-wide attention and significance requires a lifetime experience, sound knowledge and deep study of and intrinsically in merchant marine affairs, more than one can possibly obtain from hearsay or by a flying visit from Washington to New York for the purpose of descending into the stokehold of the S. S. "Olympic" to interview the leading stoker, who was on the "Titanic" during the disaster and to ascertain datas and facts from a petty officer in connection with the under waterline construction of these giant vessels. With such superficial knowledge obtained and from advices of naval constructors of war vessels, naturally less familiar with the merchant class of ships, the senator made his glorious reports as oratorical censor and remedial recommendor, leaving much to be desired of real worth and value. Senator Smith denounces British rulings without apparently much knowledge of our own deficiency of law in this respect, which is not only inefficient in relation to construction of hull, but in load line, boilers and classification of vessels, and deplorably lacking in regards to navigational equipment and maintenance, on which the writer has dwelt sufficiently in previous editorials in the Pacific Marine Review.

Is it, therefore, to be wondered that our shipping interests, which by no means lack efficient naval architects and marine experts of the finest type, should now be confronted with such an irrational and incompetent report, heralded far and wide and as above described, with an apparent attempt to aggrandize and egotistically glorify in political advertising before the galleries of inland states at the expense of generous Uncle Sam, who so lavishly provides in this respect through his printing office in Washington, D. C. I purposely mention inland states, for as far as our coast states are concerned the Hon. Wm. Alden Smith has utterly failed to convince the professional mind and has long since become the laughing stock as the hero of life-saving in water-tight compartments.

In the following I quote from the most amazing speech on a marine disaster concerning a foreign nation ever made in the halls of the United States Senate, making comments to prove my assertions after each quoted paragraph on Senator Smith's shallow eloquence of froth and fume.

### Boilers

"No sufficient tests were made of boilers or bulkheads, or gearing, or equipment, and no life-saving or signal devices were reviewed; officers and crew were strangers to one another and passengers to both; neither was familiar with the vessel or its implements or tools; no drill or station practice or helpful discipline disturbed the tranquility of that voyage, and when the crisis came a state of absolute unpreparedness stupefied both passengers and crew, and, in their despair, the ship went down, carrying as needless a sacrifice of noble women and brave men as ever clustered about the Judgment Seat in any single moment of passing time."

What in the world have boiler tests to do with collision of icebergs? Does the senator know that under the British ruling a hydraulic test is made previous to the boilers being placed in the vessel and before they are lagged? Does he know that a hydraulic test is more severe than a steam test and is made in Great Britain hydraulically of twice the working pressure?

### Board of Trade

"We shall leave to the honest judgment of England its painstaking chastisement of the British Board of Trade, to whose laxity the world is largely indebted for this awful fatality. Of contributing causes there were very many. In the face of warning signals speed was increased and messages of danger seemed to stimulate her to action rather than to persuade her to fear."

While it is only too true that the Board of Trade has its failings, we nevertheless have been only too ready to copy some of their splendid achievements, and if we had adopted more of their rulings our ship owners would be better off today and so would the traveling public. Although the Board of Trade rulings proved sadly lacking in regards to life-saving equipment in the "Titanic" case, extraordinary conditions require extraordinary remedies, and this disaster was of an extraordinary kind. Our own rules for life-saving equipment were only more stringently enforced after the "Slocum" disaster. The Pacific Marine Review appreciates the kind consent of Senator Smith to leave the chastising of the Board of Trade to Great Britain's sound judgment.

Sir Alfred Charmer, until last year professional member of the Marine Department of the Board of Trade, was asked during the "Titanic" inquiry why it was that no alteration had been made in the Board of Trade scale for boat accommodations in liners for the past eighteen years, said:

"I considered the matter very closely from time to time. It was the safest mode of traveling in the world, and I thought it was neither the right nor the duty of a state department to impose requirements upon the mode of traffic as long as the record was a clean one. As ships grew bigger they were stronger and better. I considered from my own experience that the maximum number of boats (sixteen) was all that could be rapidly dealt with at sea and that could be safely housed without encumbering the vessel's deck unduly. I considered that traffic was safe on account of the definite routes agreed upon to lessen the risk of collision and avoid ice and fog. Then again was the question of wireless telegraphy. The voluntary action of the owners was carrying them beyond the requirements of the state, and when voluntary action on the part of ship owners is doing that, any state department should hold its hand before it steps in to make a hard and fast scale. I did not consider it necessary to increase the scale, and that was my advice to Sir Walter Howell. Even in view of the disaster, I would not extend the scale of lifeboats. The present scale is good as far as it goes, and it goes as far as I want it to go."

In the summing up of questioning Sir Alfred, it brought the statement from him that no particular lessons could be learned from the disaster because it was an extraordinary one and the Marine Department guards against ordinary occurrences, but not extraordinary.

Although the writer cannot coincide with Sir Alfred's opinion in its entirety, there is wisdom in the conclusion of the statement, which unquestionably is based on good foundation through long experience. However, relative to sixteen boats, I am in a position to prove Sir Alfred's opinion to stand for naught. In the loss of a 21,000-ton American steamer, under my command with a Chinese crew, during a short period of thirty minutes, eighteen lifeboats out of a complement of twenty, not mentioning the six life-rafts, came in useful display, embarking and conveying from the doomed vessel into safety ashore, a distance of one mile and a quarter, some five hundred people, without loss or injury to a single person, while the entire forward end up to the dining room of the 630-foot long vessel was completely submerged by striking and unfortunately remaining on Kui-Kone reef, which is surrounded by navigable water off the Japanese Coast and exposed to the Pacific Ocean.

#### Captain Smith and the Majestic Pile

"Captain Smith knew the sea, and his clear eye and steady hand had often guided his ship through dangerous paths; for forty years the Storm King sought in vain to vex him and menace his craft; but once before in all his honorable career was his pride humbled, or his vessel

maimed. Strong in limb, intent of purpose, pure in character, dauntless as a sailor should be, he walked the deck of this majestic pile as master of his keel, titanic though she was; his indifference to danger was one of the direct and contributing causes of this unnecessary tragedy, while his own willingness to die was the exalting evidence of his fitness to live.

"Those of us who knew him well—not in anger, but in sorrow—file one specific charge against him, over-confidence and neglect to heed the oft-repeated warnings of his friends; but, in his horrible dismay, when his brain was aflame with honest retribution, we can still see, in his manly bearing and his tender solicitude for the safety of women and little children, some traces of his lofty spirit when dark clouds lowered all about him and angry elements stripped him of his command, while his devotion to his craft, even as it writhed and twisted and struggled for mastery over its foe, calmed the fears of many of the stricken multitude who hung upon his words, lending dignity to a parting scene as inspiring as it is beautiful to remember.

"The mystery of his indifference to danger, when other and less pretentious vessels doubled their lookout or stopped their engines, finds no reasonable hypothesis in conjecture or speculation. With the atmosphere literally charged with warning signals and wireless messages registering their last appeal, the stokers in the engine room fed their fires with fresh fuel, registering in that dangerous place the vessel's fastest speed.

#### "The Ice Stole on Her"

"At that moment the ice stole upon her as hard as steel and struck her in a vital spot, while the last command of the officer of the watch, distracted by the sudden appearance of extreme danger and in his effort to avert disaster, sharply turned aside the prow, the least dangerous point of contact, exposing the temple to the blow.

"At the turn of the bilge the steel encasement yielded to a glancing blow so slight that the impact was not felt in many parts of the ship, although representing an energy of more than a million foot-tons, said to be the equivalent of the combined broadsides of twenty of the largest guns in our battleship fleet fired at the same moment.

"There is evidence tending to show that the water-tight compartments were not successfully closed either above or below. No general alarm was given, no ship's officers formally assembled, no orderly routine was attempted or organized system of safety begun. Haphazard, they rushed by one another, on staircase and in hallway, while men of self-control gathered here and there about the decks, helplessly staring at one another or giving encouragement to those less courageous than themselves.

"Lifebelts were finally adjusted to all and the lifeboats were cleared away, although strangely insufficient in number, only partly loaded, and in all instances unprovided with compasses and only three of them with lamps. They were manned so badly that, in the absence of prompt relief, they would have fallen easy victims to the advancing ice floe. One witness swore that two of the three stewards in her boat admitted that they had never had an oar in their hands before and did not even know what the oarlock was for.

"The lifeboats were filled so indifferently and lowered so quickly that, according to the uncontradicted evidence, nearly 500 people were needlessly sacrificed to want of orderly discipline in loading the few that were provided. And yet it is said by some well-meaning persons that the best of discipline prevailed. If this is discipline, what would have been disorder?"

This paragraph re-echoes of sentimental fastidiousness in the censor of a particularly well-fitted and widely ex-



perienced commander, on whose name, in the writer's opinion, the brunt of the blame for the loss of this giant of the seas, and with it its thousands of lives, should never have been heaped, and no practical man would do so. Many may question Captain Smith's judgment of the moment, but we must assume that so eminent a mariner was above professional ignorance. His example of manhood in accepting the ethics of the sea in their uttermost requirements will always brilliantly shine in the annals of his country's marine and naval history, for he has proven himself in his long and clean career efficient in both branches.

Lord Mersey, during the sitting of the British court, spoke of the possibility of his having to find Captain Smith, who went down with his ship, guilty of negligence or error of judgment. "I am told," he said, "that it is not the practice to find negligence against a dead man. Is that so?"

Mr. Aspinall, K. C.: "I have never known a case. The court has shown the greatest reluctance to accede to any such suggestion."

Lord Mersey: "That is what I feel. I feel the greatest reluctance in finding negligence against a man who cannot be heard. But if there is a fixed practice which guides me—well, of course, I am relieved of the difficulty altogether."

Mr. Aspinall: "The parties and the court have always been very tender of the good name and honor of a dead man."

Mr. Scanlan was about to raise the question of binoculars for the lookout men when Lord Mersey said: "The judgment is that binoculars are not desirable in the crow's nest."

Lord Mersey's decision seems to fully coincide with the opinion of the Pacific Marine Review in regards to Captain Smith, as well as relative to binoculars for the lookout men, of which particular mention was made in this publication's June issue.

#### Attack on the Officers

"Among the passengers were many strong men who had been accustomed to command, whose lives especially fitted them for such an emergency. These were rudely silenced and forbidden to speak, as was the president of this company, by junior officers, a few of whom, I regret to say, availed themselves of the first opportunity to leave the ship.

"Some of the men, to whom had been entrusted the care of passengers, quickly deserted the ship with a recklessness and indifference to the responsibilities of their positions as culpable and amazing as it is impossible to believe. And some of these men say that they 'lay by' in their partly filled lifeboats and listened to the cries of distress 'until the noise quieted down,' and surveyed from a safe distance the unselfish men and women and faithful fellow officers and seamen, whose heroism lightens up this tragedy and recalls the noblest tradition of the sea."

A chatter, to say the least, but offensive to the moral taste of every nautical reader. These gallant junior officers, who left their doomed ship duty-bound in charge of their respective lifeboats to which they were assigned by their superiors and ordered to depart with their charge to safety, deserve all praise. I have repeatedly in previous articles commented on the remarkable discipline maintained by the captain and his staff in this disaster. The memory of these men and their manliness, dead and living alike, will glorify tradition.

Because the White Star Line was so unfortunate in losing the steamer "Titanic," with so many lives, this will in the eyes of the world not lower the respect and standard of the British mariner and seafarer. The navigator as well

as the engineer, from an educational point of view, must go through a much more thorough training to acquire the certificate of competency according to the Board of Trade rule than is today required by our Steamboat Inspection Service, with which this department, without proper division of various duties, is unjustly burdened. The faith of the traveling public seems unshaken in the management of the White Star Line and their splendidly equipped and manned ships, as I note the "Olympic's" last east-bound passenger list, June 15, was the largest on record this year.

Rear Admiral Chas. D. Sigsbee, U. S. N., who commanded the American liner "St. Paul," which was transformed into an armored scout cruiser during the Spanish war, said in a very able article published in the July issue of the Century Magazine: "I find it difficult to conceive how the officers of ocean liners can command the situation under the stress of an emergency of that like the 'Titanic.' Undisciplined bodies of people, whether soldier, sailor or civilian, are likely to be impetuous and clamorous in sudden emergency. Even many who volunteer help are likely to be 'all fingers and thumbs' in the mechanics of the moment. In the main, the conduct on board the 'Titanic' appears to have been amazingly fine and reflects great credit on Captain Smith, his officers and many passengers."

This is a just and equitable viewpoint taken by a man who knows and can appreciate the valor of men during a sea catastrophe.

#### Piracy and Pillage

"Piracy and pillage are twin brothers of international concern, and, under the same searching scrutiny, modern shipping should be free from every inherent defect. Lines of travel must be more carefully defined, strength of bow positive, and water-tight subdivisions sufficient to limit life-saving equipment better and numerous enough for all, discipline and practice a rudimentary exaction, powerful lights should be provided, buoys should be carried by every ship temporarily to mark the place of the ship's burial in case of accident; and men of strength and spirit there must be, won back to a calling already demoralized and decadent. Americans must re-enlist in this service, they must become the soldiers of the sea, and they should be better paid for their labor, their rights must be respected, and their work carefully performed; harsh and severe restraining statutes must be repealed, and a new dignity given this important field of labor."

Piracy and pillage has as little to do with the "Titanic" disaster as the test of boilers to which I have previously referred. But what in God's creation does the Honorable Senator mean by recommending the carrying of buoys on ships to mark the place of their burial at sea, as in the "Titanic" case, in water of two miles depth? To the professional mind such recommendation belongs under the heading of "What fools these mortals be," or to quote from the Good Book: "No doubt ye are the people and wisdom will die with you."

The latter part of this paragraph in Senator Smith's speech has caused much resentment throughout the British press in general and shipping papers in particular, which consider such remarks a reflection upon the ability and efficiency of the British sailor. We would love to see the American merchant marine restored to its former self, but unless we strenuously stride with just means for such rehabilitation we stand indeed a poor chance of inducing our youngsters to follow the sea as of yore.

Shape our navigation laws with sufficient and due inducement for American capital to invest in building and operating offshore steamers, but do not hamper and burden the few existing companies, whether owned by railroads or not, with unnecessary restriction, which likewise refers

to the future Panama Canal trade. When this is successfully accomplished then a future for our youngsters, inspired by the sea's calling, will be created as it was during the days of our proud clipper ship period. There are many who are willing and only too ready to adopt this honorable career, but without ships and the Stars and Stripes flying from the flagstuffs of offshore steamers the future for the American sailor boy is sadly limited to the coastwise trade. The few exceptions of the above class, memorized without troubling about statistical reference, are the Pacific Mail Steamship Company, with four fine vessels, the Oceanic Steamship Company with three recently remodeled ships, the Matson Navigation Company with three ships and one now under construction, the Great Northern Steamship Company with one, the American Line with four old ships, the Red Star Line with two, and last but not least, the American-Hawaiian Steamship Company with the most modern, largest and, due to the Panama Canal opening, rapidly expanding fleet of splendid cargo steamers under our flag. This ends, roughly speaking, the list of offshore steamers of a country with the finest natural harbors on individual coast lines, unequaled by any other nation in the world, inhabited by ninety-five millions of remarkably energetic people, embodying the highest ideals of civilization in the only and most progressive English-speaking republic of the world. What is the cause of this stagnancy? Nothing but obsolescence of maritime law, for the revision of which we have long fought, for the revision of which we are still fighting and which so far has only resulted in more uncalled-for encumbrance to the detriment of patriotic ship-owners, many of whom keep their ships going more as a matter of pride than for the return on capital invested.

#### Captain Lord of S. S. "California"—Obsolete Shipping Laws

"Had he been as vigilant in the movement of his vessel as he was active in displaying his own signal lamp, there is a very strong probability that every human life that was sacrificed through this disaster could have been saved.

The dictates of humanity should have prompted vigilance under such conditions, and the law of Great Britain giving effect to article 2 of the Brussels convention in regard to assistance and salvage at sea is as follows:

"The master or person in charge of a vessel shall, so far as he can do so without serious danger to his own vessel, her crew and passengers (if any), render assistance to every person, even if such person be a subject of a foreign state at war with his majesty, who is found at sea in danger of being lost, and if he fails to do so he shall be guilty of a misdemeanor."

The lessons of this hour are, indeed, fruitless and its precepts ill-conceived if rules of action do not follow hard upon the day of reckoning. Obsolete and antiquated shipping laws should no longer encumber the parliamentary records of any government, and over-ripe administrative boards should be pruned of dead branches and less sterile percepts taught and applied.

In a period of the sharpest rivalry, when the very presence of the owner and builder unconsciously stimulates endeavor and prizes frequently await the fleetest skipper, the restraint of organized society is absolutely necessary to safety. As men have reformed the natural banks of the ocean and struck the shackles from its contracted bounds, dedicating its bays and shores to commerce, we must do our utmost to overcome its perils."

Antiquated navigation laws have, alas, too long encumbered shipping under our flag. Still the dry, rotten branches are not pruned on this tree "antiquity," but left on to hinder the growth of the young twigs, which sprout

with every opening of Congress, only to die again year after year, making the trunk non-productive.

Whatever rules we may propose to adopt in the future, weeding is essential first, then let us go slow and weigh conscientiously every step, and not without consulting our experienced naval architects of the merchant marine and the many reliable marine experts, of whom the United States is not by any means poverty stricken, although injudicious legislation has kept our merchant marine from expanding and from favorably competing not only with our Anglo-Saxon cousins across the pond, but with every maritime nation of the world.

E. F.

#### THE MERCHANT SERVICE GUILD OF BRITISH COLUMBIA HAVE JUST CAUSE FOR RESENTMENT

The subjoined correspondence addressed to the Minister of Marine and Fisheries of Canada, by the above guild re the use of the United States inland rules of the road in waters of British Columbia, has much merit and calls attention to the vital importance of safe navigation. Inland Rules of the Road for the navigation of our vessels in foreign waters are prohibitive and have no right to be used whatsoever. International Rules of the Road should solely be adhered to when navigating in foreign territories. I feel assured that if the guild would report such mistakes made by those in charge of vessels navigating in British Columbia waters, the Local Board of our Steamboat Inspection Service would drastically deal with the offender.

—Ed. Note.

#### The Merchant Service Guild of British Columbia

Office of the Secretary.

Bridgman Building, 1007 Government St.,

Victoria, B. C.

The Honorable the Minister of Marine and Fisheries, Ottawa—

Sir: I am instructed by the Merchant Service Guild of British Columbia, an organization representing the captains and officers serving in the coasting and foreign trade of this province, to bring before your notice certain confusing and highly dangerous practices which are indulged in by vessels belonging to the United States when navigating the waters of British Columbia.

The American vessels, when navigating these waters, are in the habit of using the United States Inland Rule of the Road instead of the International Rule of the Road, which latter is in force on this coast and followed by the great majority of our British vessels.

Under article 30 of the International Regulations for Preventing Collisions at Sea, special rules may be made by local authority relating to the navigation of any harbor, river or inland waters, but such rules are merely local rules, and, being so, are therefore restricted to certain limits; accordingly they cannot be practiced within the territory of another country, unless they have been duly acknowledged and adopted by that country.

The United States Local Inland Rules, however, are used by all the American vessels when plying on the coast of British Columbia, although they positively have no force and are not legal in Canadian waters.

The guild feels that this matter is one of serious importance to all concerned, and it would therefore urge upon the department the necessity for taking immediate action to remedy the conditions existing, because to the majority of our British captains and officers, instructed in and following the International Rule of the Road, they are exceedingly confusing, and as a natural result very dangerous to life and property in these waters. The confusion prevailing is the more evident when it is taken into consideration that a few of our British masters have

commenced using the Inland Rules, being under a false impression that they are legal in these waters; the great majority, rightly, however, refuse to recognize them.

Instances have been reported to the guild by certain of our members in command of passenger and cargo steamers on this coast, where collision with American vessels in our waters has very nearly occurred owing to the insistent use by the American shipmasters of their own Inland Rules.

Certain of the Inland Rules are directly opposed to the International Rules. For instance, under rule 1, article 18, the whistle is used to indicate the side on which a giving-way vessel intends to pass the other vessel, instead of being used to indicate the direction in which a giving-way vessel is altering her course, as required by the International Rule.

Then, again, under rule 7 of the same article, an over-

taken vessel is required to acknowledge the sound signal from the overtaking vessel, which practice is obviously opposed to the International Rules.

It is a question open for discussion as to which of the two rules is the best, but the guild would strongly recommend that one only should be adopted and used in these waters. Further, it should be made perfectly clear to all vessels which rule is in force here, and they should be compelled to obey it and to recognize no other whilst within our limits.

The guild would further beg to suggest that in the event of the United States Inland Rules being adopted, then our candidates for coasting masters and mates certificates should be examined in them.

Trusting you will kindly give these proposals your favorable consideration and earliest attention, I have the honor to be, sir, your obedient servant,

(Signed) H. G. JARVIS, Secretary.

## THE BUSINESS AND FINANCIAL OUTLOOK

**G**ENERAL business continues to improve in spite of politics and the uncertainties of this peculiarly confused campaign. From all sections of the country come advices of sustained trade revival, with betterment in both wholesale and retail lines. Business men are still feeling their way in the sense that they are not committing themselves to heavy future operations pending more settled conditions in politics and more definite news about the crops, but the presidential election is no longer the bugaboo that it was. The feeling is fast gaining ground that business enterprises are not to be restricted by politics and that the people of the United States are not going to sit still with their hands folded pending the counting of the votes next November.

The whole country is too prosperous to permit of any such policy of inaction. On the contrary, there is excellent reason to believe that general business will gradually increase in the next few months; that more mills will soon be running on a "capacity basis"; that the great dry goods stores and commission houses will handle a larger volume of orders; and that both railroads and industrial corporations will, in the near future, be operating more normally. Some indication of such enlargement of trade has been shown by the increased output of commercial paper bearing the names of well-known mercantile concerns. These borrowers have kept out of the market so long, owing to reduced business and the virtual abandonment of new undertakings, that it is highly encouraging to think they are again finding it necessary to borrow large sums from the banks. Banks invariably seek purchases of this sort since they offer a highly desirable form of investment.

During the closing days of June, \$4,000,000 in gold was withdrawn for direct shipment to Paris. The movement in part reflected the usual preparations of the French market to assist the German banks during the period when these institutions are usually tied up with heavy engagements. The outflow had little effect upon money rates here since the inquiry was too narrow and the offerings too heavy to justify any material hardening of interest rates. With the broader borrowings by merchants, however, it would seem as if the money market would show greater activity in the future, so that by the time harvesting preparations are well under way there will be a much larger general demand for money. At the same time money rates are not likely to be excessive, and it is certain that borrowers will not experience the slightest difficulty in securing such funds as they really need for legitimate mercantile and corporation undertakings.

Upwards of \$250,000,000 will be paid out during July for semi-annual interest and dividends. This money usually returns quickly to the reserve centres, and it seems likely this year that a considerable portion of such funds will be permanently reinvested. There has been for some time past a fair absorption of bonds, but the difficulty has been for the bond houses to secure a sufficient supply of really good offerings, obtainable at prices providing an income yield of approximately 5 per cent. Investors are demanding a higher interest return than was formerly asked, and it looks as if such securities would be sought after for some time to come. The same may be said of the London market where British consols—the premier security of the world—lately sold down to the lowest price touched in eighty-one years. The fall in the price of consols was in part traceable to the competition furnished by very large offerings of other high grade bonds which were sold at prices yielding the buyer a much higher interest return.

If the crops turn out well it may be expected that a period of very good times will be enjoyed by the country as a whole. This forecast is based on the known soundness of underlying conditions, the country's strong banking position, and the absence of reckless speculation of any sort. We are just nearing the season when crop scares are often prevalent, and the recent sharp advance in the price of wheat in the West has been one indication that speculators in the grain markets were resorting to familiar tactics in forcing a rise in prices. It is much too early in the season, however, for the markets to become really excited over these reports, and there is no reason whatever to believe that very serious damage has been done to the crop in the Northwest. The most authentic reports show that crop conditions as a whole are highly satisfactory for this time of year, and that there will be an immense amount of new wealth created as a result of the next harvest.

Within a few weeks the demand for money for harvesting purposes will have to be financed by the Eastern banks, and it looks now as if a large amount would be required in connection with the arrangements under way to market the crops. One factor which has been immensely beneficial to the people of the South is the enormous purchases of cotton by foreign spinning interests. This movement has been unprecedented and explains in a way the very strong showing made by the banks of the whole cotton belt section, and, as a rule, the Southern banks have not borrowed very heavily from their New York correspondents this

season. The time has arrived, however, when heavy shipments of currency will be called for by various interior markets, and the extent of the telegraph transfers of currency through the sub-treasury shows that many out-of-town markets are withdrawing money from New York. As a result of these demands there has been within recent weeks a considerable reduction in the volume of New York deposits of out-of-town banks.

It looks as if more settled conditions were prevailing in the labor market. There have been of late fewer strike disturbances, and although it is natural for employes to make demands for higher wages, the extent of these applications shows that they are not as excessive as they recently were. Labor men, for the most part, are well satisfied with wages which they now receive, and the more intelligent labor leaders know that the scale of wages now paid in most industries is about as liberal as present business will stand. In spite of the larger trade now being done by the country as a whole, it is well known that the margin of profit is comparatively small and that in some industries it is not yet sufficient to make up in any material degree for the heavy losses sustained during the period of serious trade depression last year. The situation in this respect, however, does not differ at all from that usually encountered after a period when general trade has been dull and manufacturers are finding it difficult to keep their plants even partially employed.

Within the last few days there has been some hardening of time money rates, due in part to the unexpected shipments of gold to Paris, but the movement has not gone far. As a result of the extensive lending operations of the last few months it is believed that the foreign markets are still heavily in debt to the New York banks. Most of the loans made to Germany several months ago have been renewed, and with the fresh advances recently made it is safe to assume that the total temporary indebtedness of this character stands again at a relatively large figure for this time of the year. The heavy credit balances arising out of these operations will afford important protection to the New York money market later on, as it seems safe to count upon the ability of the banks here to import gold from Europe on a large scale in the fall if they choose to do so. One factor which will almost certainly be reflected in a broader demand for money in this country is the increased requirements of mercantile borrowers due to trade revival. It must be remembered that business improvement is long overdue, and because of the strong underlying conditions it is reasonable to expect decided betterment, with much larger borrowings by mercantile interests after the November elections are held. It is certain also that there will be a great deal of money required in connection with new financing which the railroads and industrial corporations will be forced to provide for before the end of the year. The one big factor in all these calculations is the arrangements which will have to be made during the next six or eight months for the paying off or the refunding of the \$250,000,000 short term note issues which will mature next year. While a few of these loans have already been extended, virtually all the financing remains to be done, so that the total operation will represent in many ways the most important financial transaction yet attempted this year. There is little doubt that these loans can be taken care of without serious inconvenience.

July 1st, 1912.

#### THE FOURTH NATIONAL BANK of the City of New York.

During the year ended June 30, 1912, there were built in the United States and officially numbered by the Bureau of Navigation 1,702 merchant vessels of 243,792 gross tons, compared with 1,208 of 302,158 gross tons for the same period of 1911, showing a loss of 58,366 tons.

#### INTERNATIONAL MERCANTILE MARINE COMPANY.

THE combined income account of the companies for the year 1911 shows a surplus of \$4,509,269.53 after meeting all fixed charges and operating expenses, in which latter are included all charges for repairs, maintenance and overhauls, as compared with a surplus of \$4,849,580.69 for the year 1910, a decrease of \$340,311.16.

This does not include the operations of the Leyland and National Lines, in which this company has important holdings. These lines have made separate reports to their stockholders, showing profits for the year in working the Leyland Line of £237,995.19 as against £101,332.3 in 1910, and the National Line £9,306.73 as compared with £3,015.163 in 1910, both companies showing a very satisfactory improvement over the previous year.

The number of vessels now in the various services of the International Mercantile Marine Company is 120, representing a gross tonnage of 1,067,425 tons, to which will be added, when the six steamers now building are completed, 113,700 tons gross, making in all a total tonnage of this and subsidiary companies of 1,181,125 tons, classified as follows:

- 1 training ship, 1,814 tons gross.
- 21 steamers under 5,000 tons gross.
- 57 steamers between 5,000 and 10,000 tons gross.
- 36 steamers between 10,000 and 15,000 tons gross.
- 4 steamers between 15,000 and 20,000 tons gross.
- 5 steamers between 20,000 and 30,000 tons gross.
- 2 steamers over 45,000 tons gross.

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#### General Remarks to the Stockholders

The total volume of the trans-Atlantic passenger traffic, from which source your company derives the greater part of its earnings, was considerably less than for the year 1910, there being a material decrease in the number of first class passengers traveling in both directions, and also in the westbound third class passengers or immigrants entering the country, owing to the falling off in the demand for labor; consequently the results from this branch of the business were less than those of the previous year, but to a certain extent this was compensated for by an improvement in the second class movement, and also by the increased numbers leaving for Europe in the third class, due to the same cause, which, with the experience of previous years, clearly demonstrates that this important part of the business ebbs and flows with the fall and rise of prosperity in this country.

Owing to the great development of and the inducements offered by the Canadian Government to prospective settlers in the vast and fertile provinces of Northwestern Canada, the immigration into Canada during 1911 was very satisfactory, and as your company is also largely interested in this trade, it benefited accordingly, which confirms the correctness of the previous decision of your directors to extend the operations of your company over as wide a field as possible.

Your directors have also considered the demand of Australia for immigration, and have decided, in addition to the steamers heretofore operating between Great Britain and Australia, to transfer into this trade from other services four more steamers carrying third class passengers, being confident that this policy will improve and tend to make the earnings of your company more stable.

During the first half of 1911 the trans-Atlantic freight business, of which your company has a very large share, continued in the depressed condition which had prevailed during several previous years, with brief periods of slight relief, but during the latter part of the year there were distinct signs of a better state of affairs, which materialized during the closing months into a very satisfactory and healthy freight market, and the outlook for 1912 in not only the trans-Atlantic, but in the world's carrying



trade as well, is quite good, and has not been so encouraging for ten years past, and there is every reason to expect that the earnings of your company for the year 1912 from this source will show a marked improvement.

During the summer months of 1911 very serious labor troubles developed in Europe, which resulted in some interruptions and cancellations of sailings in your services with consequent loss of earnings, and also in very materially increasing the operating expenses of all of the steamers, thereby reducing the net earnings of your company.

The results of the company's experiences with cruises to the Panama Canal and the West Indies during 1911 being so encouraging your directors decided to place the steamship "Laurentic" in this trade for two cruises during the early part of 1912, which have been so satisfactorily performed that it has been determined, owing to the demand of the traveling public for an opportunity to visit the Panama Canal and see other interesting points in the West Indies, to put both the "Megantic" and "Laurentic" into this trade, for four voyages during the early part of 1913, as these steamers are considered to be particularly suitable for this special business.

Your directors are so confident that there will be a very large business to be done from coast to coast through the Panama Canal that it has been thought desirable to re-transfer the American built steamers "Finland" and "Kroonland" to the American flag and thus make them available for this business, for which they are especially well suited.

Training ship "Mersey." The decision to add this ship to the fleet has proved to be a wise one, as a number of the young men having completed their training upon her, have entered your employ as junior officers and are giving satisfactory service.

Your directors with great regret record the loss of the S. S. "Titanic" on April 14, 1911, on her maiden voyage from Southampton to New York. The steamer collided with an iceberg and foundered shortly thereafter and a most serious and deplorable loss of life resulted, for which your directors record their profound sorrow; and also their deepest sympathy with the relatives and friends of the passengers, officers and crew to whom this disaster has brought great bereavement.

The board takes pleasure in acknowledging the loyal and efficient services of the officers and employees of the company both ashore and afloat.

By order of the Board of Directors.

C. A. GRISCOM,  
Chairman of the Board.

J. BRUCE ISMAY,  
President.

#### PACIFIC COAST STEAMSHIP COMPANY'S ALASKA SAILINGS

The sailings of this company's steamers to Alaska from Seattle during the summer months will be as follows: "City of Seattle," excursion, July 1; "Spokane," cruise, July 3; "State of California," performing a like service to the "City of Seattle," July 7; "City of Seattle," excursion, July 13; "Spokane," cruise, July 17; "State of California," excursion, July 19; "City of Seattle," excursion, July 25; "State of California," excursion, July 31; "Spokane," cruise, July 31; "City of Seattle," excursion, August 6; "State of California," excursion, August 12; "Spokane," fifth and last cruise, season of 1912, August 14; "City of Seattle," last excursion, August 18; "State of California," last excursion, August 24; "Spokane," regular commercial trip, Skagway and way ports, September 5; "City of Seattle," same service, September 11; "Spokane," September 17; "City of Seattle," September 23; "Spokane," September 20; "City of Seattle," Oct. 5; "Spokane," Oct. 11.

#### GREAT NORTHERN RAILWAY

##### Retirement of the Chairman of the Board, James J. Hill, Valedictory Message to Shareholders

SO prominently is the name of James J. Hill identified with the past, present and future of the Pacific Northwest that it is impossible to pass over in silence his final retirement and withdrawal from active administration. The name of James J. Hill must permanently endure in history as one of the greatest factors in the development of the United States, constructive by disposition; he built methodically and upon sound and simple principles, principles which have stood the test of centuries throughout the world, and never permitted personal ambition to tempt him from basic foundations of cause and effect. Superficial observers and a superficial press have often credited Mr. Hill with strange powers of prophecy and vision, but in the judgment of the writer, Mr. Hill's greatness rests in his persevering retention of simple principles, enunciated years before his time, but which remain as true and faithful as the simple definitions of Euclid. It is unfortunate that in a comparatively early stage of development and civilization, the services of men like James J. Hill are neither available nor acceptable, being viewed with suspicion in the United States for Presidential honors. Probably, in future generations, when the services of the greater men have been spent in developing and directing the resources of this great country and when a period of reaction and natural direction has been reached, a better and more competent standard of men will be available and acceptable for public office.

An extract of Mr. Hill's circular to shareholders of the Great Northern Railway Company follows: H. B. J.

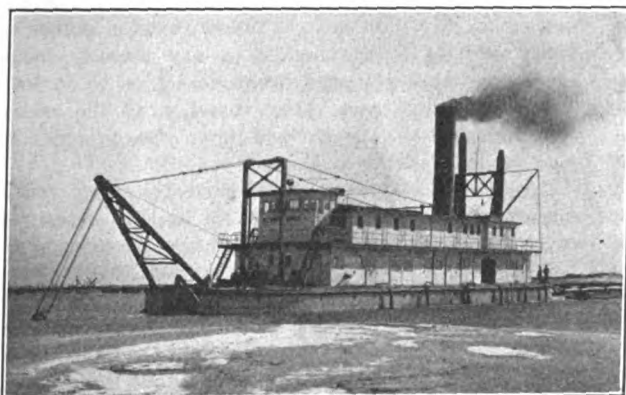
"With my resignation July 1, 1912, of the chairmanship of the board of directors ends my active official participation in the conduct of the Great Northern Railway Company. The work begun nearly forty years ago has been substantially accomplished; though its results have been extended far beyond the foresight of any one at that time. The property whose fortunes I have directed for so many years has become an organic growth. Its future will be shaped more by the forces that govern the development of the natural resources of the country than by individual initiative. I will remain a member of the executive committee of the board, and any services it may need from me will always be at its command. But it seems wise to begin the process of adjustment to other hands at this time when all the outlook is fair and every change may be weighed with deliberation in the light of what is for the best interest of the property.

"The financial outlook of this company is as well assured as that of most governments. It has a provision made now, deliberately and not under any pressure of necessity for the work of years to come. That provision may be utilized in lean years and held in suspense in fat years, so as always to realize the best prices for securities and to keep the credit of the company unimpaired. No emergency can surprise it. It is financed for a period beyond which it would be fanciful to attempt to provide. And the development of its business throughout every part of the practically half a continent which it serves makes the payment of dividends on the stock as certain as that of its bond coupons. There has never been a default in either. There has never been a dollar's worth of stock or bonds issued that was not paid for in cash, property or services at its actual cash value at the time.

"The first phase of the Great Northern Railway system is ended. The Great Northern is now wrought so firmly into the economic as well as the corporate body of the land as to have fitted itself permanently into the natural frame of things. So far as any creation of human effort can be made, it will be proof against the attacks of time."

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# MARINE BOILERS

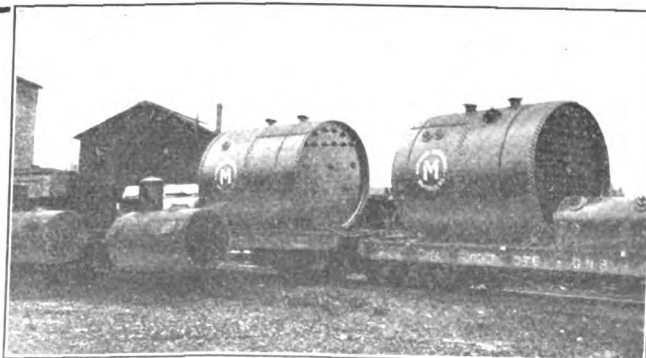
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## "BOTH TO BLAME"—SS. "BEAVER" VS. SS. "SELJA"

In the suit arising from the collision of these two steamers the District Court for the Northern District of California has handed down a decision of both to blame and ordered the damages divided.

The facts of the case are as follows:

On November 22, 1910, the S. S. "Beaver" sailed from San Francisco for Portland. Shortly after leaving port fog was encountered, speed was reduced and the automatic fog whistle started. Shortly after the whistle of an approaching steamer was heard and almost immediately the two steamers were in collision, with the result that the other steamer, found to be the "Selja," was sunk and with her cargo became a total loss. Suit and countersuit were entered and many claims were made by both sides. During the course of the trial the "Beaver" admitted that she was partly at fault in not having stopped as the regulations provide, but maintained that the "Selja" was also improperly navigated and was also at fault. During the course of the trial it was brought out that while the "Selja" was being run at a moderate speed, yet her engines were not stopped until the instant before the collision, and the court held that this was in violation of article 16 of the Rules of the Road, and held her equally to blame.

Article 16 reads as follows:

"A steam vessel hearing, apparently forward of her beam, the fog signal of a vessel the position of which is not ascertained, shall, so far as the circumstances of the case admit, stop her engines, and then navigate with caution until danger of collision is over."

In cases of this kind the damages are equally divided, each steamer paying to the other one-half of the damage sustained by each. The difficulty in this case is not the ascertainment and division of the damages, but the ultimate settlement of the claims for the cargo of the "Selja," which was lost. The "Beaver" suffered comparatively slight damage, but the value of the "Selja" was probably about \$150,000 and her cargo about \$260,000.

It is the rule of law that an owner of cargo damaged in collision where both vessels are to blame can make recovery in full from either of the colliding steamers. In this case as the "Selja" was a total loss there was nothing left for the cargo owners to proceed against, therefore liability would fall entirely on the "Beaver," and this latter steamer would also be liable for one-half of the value of the "Selja."

Under section 3 of the "Harter" act, if a shipowner has used due diligence in making his ship seaworthy he is relieved from liability for damage to cargo arising from negligent navigation. If this act alone governed it would relieve the "Selja" from any part of the loss to her cargo and would throw upon the "Beaver" liability for all of the cargo of the "Selja," and also one-half of the value of that steamer. The question then arises is the "Beaver," being the only tangible property against which the owners of the cargo on the "Selja" can proceed, and being held liable in full, entitled to offset against the claim for the loss of the "Selja," one-half of the amount which she must pay to the cargo owners? If such is the case then the "Selja" is paying indirectly for a loss from which, apparently, she is exonerated by the "Harter" act.

This question was decided by the United States Supreme Court in the case of the "Chattahoochee" in April, 1899 (173 U. S. 540), where the question involved was the same as in this case. In this case the court held, in effect, that the "Harter" act, while relieving a vessel owner from the effects of the negligent navigation, did not affect the relations as between the two vessels, and it said:

"But if the doctrine of the 'North Star' (106 U. S. 17) be a sound one, that in cases of mutual fault the owner of a vessel which has been totally lost by collision is not entitled to the benefit of an act limiting his liability to another vessel until after the balance of the damage has been struck, it would seem to follow that the sunken vessel is not entitled to the benefit of any statute tending to lessen its liability to the other vessel or to an increase of the burden of such other vessel, until the amount of such liability has been fixed upon the principle of an equal division of the damages."

This doctrine appears to be perfectly sound and in accordance with law. The verdict of both to blame renders each liable for one-half the other's damages. As the "Selja" was a total loss cargo owners were entitled to recover in full from the "Beaver." Therefore the loss to the "Beaver" was her own physical damage plus what she had to pay in the way of cargo claims. The question then becomes not one as to liability between the "Selja" and her cargo, but as to liability between two ships, and the "Beaver" having proven her damages should be entitled to offset any claim the "Selja" may have against her by one-half of her own damages including her settlements with cargo interests.

The case is likely to be appealed and may result in a hearing before the Supreme Court, as the chief justice and one other dissented from the decision of the court in the "Chattahoochee" case above cited. R. B. H.

### CASES IN COURT

United States District Court, Western District of Washington, Northern Division

T. R. Symons, Master of the British Bark "Port Caledonia," Libellant, vs. 10,466 Barrels of Cement. No. 3608.

Admiralty. Suit in rem to enforce a lien for freight, demurrage and expenses claimed under a contract of affreightment. Decree for libellant.

The British barque "Port Caledonia" was chartered for a voyage from Antwerp to Seattle and Tacoma. The provisions of the charter party relevant to the questions to be decided are that a full and complete cargo, of which at least three-quarters should be cement in barrels, should be carried; the cargo to be brought to and taken from alongside of the vessel at charterer's risk and expense; the ship master to sign bills of lading, as presented, without prejudice to the charter party; the vessel when loaded to proceed with dispatch to Tacoma and Seattle, Washington, to discharge at any wharf or place delivering the cargo there as directed; half cost of weighing not exceeding 6½c per ton, to be paid by vessel on any cargo that may be actually weighed at port of discharge; freight to be paid at the rate of 20 shillings per ton of 2,240 pounds delivered, on final and true delivery of the cargo at port of discharge, payable in United States gold coin at the rate of \$4.80 to the pound sterling; vessel to be discharged at an average speed of not less than 150 tons per weather working day after vessel is in berth; all days on demurrage, if any, to be paid for at the rate of 3 pence per net register ton per day.

Most of the cargo carried was cement. Bills of lading prepared by the charterer's agent were signed by the captain of the ship, specifying the number of barrels and the weight and the amount to be paid for the carriage thereof, and containing stipulations that the freight should be paid on delivery at the rate of exchange of \$4.85 per pound sterling, and that the ship should not be liable for leakage, breakage, loss or damage by heating, sweat, rust or decay unless occasioned by improper stowage. The vessel made the voyage without any unusual occurrence and commenced discharging at Seattle October 26, 1907, and finished discharging at Tacoma, December 20, and demurrage is demanded for eleven and one-half days in excess of the stipulated lay days. A large number of the barrels containing cement were found to be unfit for handling by reason of shrinkage of the staves, loosening of the hoops and dropping out of the heads. Some of the damaged barrels were delivered upon the wharf and the wharfinger protested against receiving the cargo in bad condition. After a de-

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lay of several days the damaged barrels remaining in the ship were re-coopered by the ship's crew and a man from shore hired by the captain. The libellant's claim against the cargo of cement includes the three following items:

\$ 505.20 balance of freight.

1,549.74 demurrage.

100.00 expense of re-coopering damaged barrels.

To protect this claim, part of the cement was stored in a warehouse subject to the carrier's lien, and to enforce said claim this suit was instituted. The third paragraph of the libel reads as follows:

"That upon the execution of said charter party said bark proceeded to loading berth at Antwerp and then loaded a cargo composed of general merchandise shipped by various parties, and 9,684 barrels of Elsa brand and 10,093 barrels of Bise brand of cement, shipped by Alex. DeGroote & Co., as agent of the charterer, for which cargo the master signed bills of lading as presented, and particularly signed bills of lading for said cement presented by Alex. DeGroote & Co., as agents of charterer, wherein the weight of said cement was represented by said charterer to be 3,487,330 kilos."

The response to this in the answer is in the following words:

"Claimant admits article III of said libel, save and except it denies that the weight of said cement so shipped on said vessel was 3,487,330 kilos."

The libel also avers that all of the cargo received on board the vessel at Antwerp was discharged at Seattle and Tacoma, and this is not controverted by the answer. The libel also avers that a balance of the freight earned, amounting to \$505.20, remains unpaid. The answer denies the amount and avers the true amount remaining unpaid to be \$77.46, which, with the interest thereon, has been deposited in the registry of the court for the libellant. The libel also avers detention of the ship by default of the charterer, the bad condition of part of the cargo due to breakage and leakage of the barrels not caused by bad stowage, and an expense of 100 incurred for re-coopering, and as to these matters the answer makes an issue.

Ira A. Campbell and Bruce Shorts, for the libellant.

Williams, Wood & Linthicum, Isaac D. Hunt and S. G. Murray, for the claimant.

Hanford, District Judge.

The real point of difference between the parties respecting the amount of freight earned and the true balance due to the libellant is in the discrepancy between the weight of the cement specified in the bills of lading and the estimated weight of the cement discharged upon which duty was paid. The court construes the charter party and the bills of lading together as constituting the contract by which the rights of the parties are to be adjudicated. In the written arguments submitted I find a useless contention as to whether the amount of freight in American money should be computed at the rate of exchange fixed by the charter party, viz., \$4.80 per pound sterling, or the rate specified in the bills of lading, which is \$4.85 per pound sterling. This is not important, for the reason that according to the libellant's testimony the total weight of the entire cargo was 3,857 tons, the total amount claimed to have been earned is 18,513.94, and payments on account which he credited amount in the aggregate to \$18,008.74, the difference being \$505.20, which is the balance sued for. This is only 34c in excess of the true amount computed at the rate of 4.80 per pound sterling. De minimis non curat lex.

The bills of lading were prepared by the charterer's agent and presented to the captain for signature, and when signed constituted a valid agreement as to the estimated weight of the cement, binding upon the parties unless impeached by proof of a difference in the actual weight, which could only be ascertained by weighing the entire consignment or by a subsequent agreement adopting a different estimate. It is true that the bills of lading show the estimated weight of the cement received by the ship and the freight was to be paid only upon the weight of cement delivered at the port of destination, but the pleadings admit that all of the cement received by the ship at Antwerp was discharged at Seattle and Tacoma and no claim has been made for short delivery. The respondent relies upon custom house certificates showing the estimated weight of the cement upon which duty was paid, but there is no competent evidence to establish as a fact that the estimate made by the customs officers was more nearly accurate than the estimate which the parties agreed to by the signing and acceptance of the bills of lading. Therefore the court finds the weight of the cargo to have been 3,857 tons, and that the balance due to the libellant on account of freight earned is \$504.86.

The respondent contends that the evidence does not dis-

close the cause of the damaged condition of part of the cargo and that the burden of proof rests upon the libellant to overcome the presumption arising from proof that the barrels were in good condition when received by the ship, by proving that the damage was caused by a fault for which the charterer is responsible. The court finds, however, that the evidence does prove that the cargo was well stowed and that the breakages and leakage were the natural consequences of shrinkage of the barrel staves after the cargo had been stowed. Whatever loss was caused thereby and the expenses of re-conditioning the barrels to make them fit for handling is to be born by the charter and not by the ship. A ship is responsible for the preservation of the cargo from the time of receiving it until it is discharged, and her captain has authority to incur any expense necessary to the fulfillment of that obligation, and the ship's lien upon the cargo includes such necessary expenses if rightfully chargeable against it. In this case it was the right and duty of the libellant to re-cooper the barrels on board the vessel and to charge the expense against the cargo, because that was necessary to minimize the loss by leakage, and it would be unjust to allow demurrage during the period of his delay in performance of that duty. There was delay caused by an excessive accumulation of matter upon the wharf and lack of space to receive cargo when the ship was ready to deliver it, and by displacing the vessel in her berth to make room for another vessel, and for that delay the libellant is entitled to demurrage. I consider that demurrage at the rate specified in the charter party for five days' time is justly chargeable, for which the ship is entitled to a lien, and it will be decreed accordingly.

The evidence proves that there was an actual expense amounting to \$25 for re-coopering, which the libellant paid, and most of the work of re-coopering was done by the crew of the ship. I consider that the claim of \$100 for reimbursement and compensation is reasonable, and that item is allowed.

(Signed) C. H. HANFORD,  
United States District Judge.

#### A CURIOUS GENERAL AVERAGE CASE

From a recent issue of *Fairplay* we extract the following:

Some cargo owners have just had a curious experience in connection with a general average claim. A British steamer, a couple of years ago, was bound from New York to the East, when she met with damage in connection with which the cargo owners had to pay a deposit. The adjusters in the East originally suggested a deposit of 10 per cent, but this was afterwards reduced to 6 per cent, and it was stated that, owing to the uncertainty of what cargo claims would be forthcoming, it was not safe to reduce the deposit below this figure. The deposits were remitted from this side in sterling and were converted at about 2s 4½d per Shanghai tael. The average statement has now been made up after a lapse of two years, and the claim amounts to a fraction under 1 per cent, or, to be exact, .950826223 per cent, which is not a bad decimal for a Shanghai average adjuster. When it was first ascertained that the claim amounted to less than 1 per cent, it was thought that the cargo owners would be inclined to complain of the excessive deposits required of them, and of the fact that they had been kept out of the use of their money for two years. It now transpires, however, that during the two years the value of the Shanghai tael has gone up from 2s 4½d to 2s 8d, so that the cargo owners are in the fortunate position of having to pay practically nothing by way of general average. Instead of having to pay nearly 1 per cent they will, after allowing for the interest and the profit on exchange, have the whole of their deposits back. I notice that the average adjuster's fees amount to over 46 per cent of the total damage.

Of the thirty-five metal vessels built on the Great Lakes the "Col. James M. Schoonmaker" and "William P. Snyder, Jr.," each of 8,603 gross tons, are the largest on the lakes. Fourteen others of 30,039 were built for the Atlantic trade.

# Chesley Tug & Barge Company

and

## Crosby Tow-Boat Company

W. R. CHESLEY, Manager

TUGS:

"Alice," "Cornelia Cook," "Harold C.," "Winona," "Katy," "Tempest," "Chema."

General Towing and Lightering with well-built lighters, from 75 to 700 tons carrying capacity

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These buoys are in reality floating lighthouses. The candlepower of their lights range from 140 to 1,060, according to the size of the lantern used.

They generate their own gas under low pressure, therefore no generating or compression plants on shore are necessary. With one full car-bide they operate continuously for from six months to a year.

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WHEN WRITING TO ADVERTISERS, PLEASE MENTION THE PACIFIC MARINE REVIEW

## MARINE INSURANCE NOTES

The London insurance market was badly hit by the "Titanic" disaster, but the settlement passed through without any trouble, when it is remembered that \$3,750,000 was paid out a few weeks ago for specie sunk on the "Oceana," while the commitments in London for the "Titanic" were in the region of \$5,000,000 on hull disbursements, cargo, etc., some idea may be gathered of the strength of the market. Fortunately refunds on the "Oceana" came back to underwriters in view of the salvage operations, which, although delayed by weather, have been entirely successful.

Owing to the losses last year, the renewal of the Pacific Coast Steamship Company's fleet was attended with some difficulty. With the same values as last year, the basis rate is now  $8\frac{1}{2}$  per cent, compared with 7 per cent, and other boats are likewise advanced by  $1\frac{1}{2}$  per cent. Trips to Alaska are penalized with an additional premium of 1 per cent for sailings between May 1st and October 31st or 2 per cent between November 1st and April 30th. Last year an additional premium of  $\frac{1}{2}$  per cent was considered sufficient. The terms of the policies are that underwriters only pay the excess of \$5,000 aggregate all claims (except total loss) for each accident. In the case of the "President" and "Governor," the rate has been advanced from  $4\frac{3}{4}$  per cent to  $5\frac{1}{4}$  per cent, without liberty of Alaska trading.

The fleet of steamers owned by the Grand Trunk Pacific Development Company was renewed last month on practically the same terms as last year. The "Prince Rupert" and "Prince George," which are valued at \$450,000 each, pay  $5\frac{1}{4}$  per cent, while the "Prince John," valued at \$75,000, pays 8-2-5 per cent, and the "Prince Albert" 9 guineas on a value of \$65,000. The renewal of the Toyo Kisen Kaisha's fleet was effected on slightly better terms, i. e., a concession of  $\frac{1}{8}$  per cent having been made for triple or twin screw steamers. The basis rate is 3 per cent, the values running from \$1,740,000 on the "Shinyo," "Chiyo" and "Tenyo" to \$400,000 on the "Buyo," "Nippon" and "Hongkong." The terms are f. p. a. unless caused by, etc. The Tehuantepec steamers, although twin screw boats, are placed at 3 per cent f. p. a. unless caused by, etc., without any return. The fleet consists of six steamers, all valued at \$420,000 each.

By the death of W. Castleton Lockhart, the founder and underwriter of the World Marine Insurance Company, the marine insurance market loses a very able underwriter. He was only 50 years of age, but had been a responsible underwriter in London for the last twenty-five years, first with the Straits Insurance Companies and later with the World Company, which he started in 1894.

## FRANK WATERHOUSE &amp; CO., INC., SECURE NEW INSURANCE AGENCY

Frank Waterhouse & Co., Inc., have secured the General Agency for Washington and British Columbia of the Union Marine Insurance Company of Liverpool. This makes an exceedingly strong office, as the Union Marine is recognized abroad as one of the best. The Marine Insurance Department of Frank Waterhouse & Co., Inc., now represents the following Companies for the following classes of insurance, and have extended their office to cope with the large increase in business:

Marine—Canton of Hong Kong, Union Marine of Liverpool, La Fonciere of Paris, London & Provincial of London.

Fire—Palatine of London, California of San Francisco.

Automobile—Commercial Union of London, Union of Liverpool.

They have also recently added the General Agency of the Pacific Fidelity Underwriters and the Pacific Coast Casualty Company for the Northwestern Territory, including British Columbia and Alaska. These two Companies have assets in excess of \$10,000,000, and do a general bonding and liability business.

## MARINE UNDERWRITING IN MAY, 1912

In happy contrast to the experience in each of the first four months of the year the marine underwriting losses in May were comparatively light. In the following table are recorded six important casualties representing total losses amounting to £211,500. This figure compares with £600,000 in January, £726,700 in February, £900,000 in March, and £1,826,000 in April. The total loss to date, therefore, is not far short of £4,500,000, and after such a phenomenal series of claims the market very badly needs a rest. In the ordinary course of events casualties in the Northern hemisphere during the next three or four months ought to be on a moderate scale, though it is noteworthy that some of the market's heaviest losses, such as the foundering of the Waratah, occurred in the English summer, while the present month has opened very inauspiciously with the serious fire in the Cunard liner Campania at Liverpool.

Risk, date and casualty—	Estimated value, including cargo.
"King Arthur" (str.), May 7, wrecked.....	£ 77,000
"Portugalete," May 10, wrecked.....	15,000
Cotton sheds at Savannah, May 14, fire.....	71,500
"Ronde" (str.), May 21, wrecked.....	10,000
"Lord Lansdowne" (str.), May 25, wrecked.....	20,000
"Oakland" (dredger), May 29, burnt.....	18,000
	£211,500

## NEW INSURANCE AGENCY FOR PACIFIC COAST.

The Phoenix of London is establishing a marine branch for the Pacific Coast and will write all the various kinds of marine risks. The Union Marine of Liverpool will be associated with the Phoenix under the general management of Mr. W. Irving of San Francisco, whose office is now fully equipped for writing fire, ocean marine, inland marine, automobile, tourist floaters, use and occupancy, sprinkler leakage, tornado and other similar lines of insurance.

Mr. C. W. Henderson, formerly with Mr. Louis Rosenthal at San Francisco, has been appointed marine underwriter.

Mr. J. Sandeman Allen of Liverpool, marine manager of the Phoenix and general manager and secretary of the Union Marine, is now in San Francisco for the purpose of organizing the new branch. Gerald E. Ryan and Vivian D. Ryan, sons of Sir Gerald Ryan, chief executive of the Phoenix of London, are accompanying Mr. Allen.

It is with sincere and extreme regret that we record the death of Mr. Alfred E. Rennie, San Francisco, general passenger agent of the Toyo Kisen Kaisha, which came as a shock to his many friends.

Mr. Rennie's death removes one of the most popular steamship men on the Pacific Coast, as he was loved so he is now mourned by hosts of men both here and in the Orient.

His ability and particular fitness as a general passenger agent, to which position he had arisen from purser, formerly in the service of the Pacific Mail Steamship Company, stands undisputed, and his untimely death at the age of 53 will be likewise much felt by the management of the Toyo Kisen Kaisha.

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Concludes All  
ARGUMENT IN FAVOR OF

## Oil Fuel

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# MOORE & SCOTT'S IMPROVED HIGH PRESSURE OIL FUEL SYSTEM

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OIL UNDER MARINE BOILERS

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No Steam Nor Air Compressor Necessary

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for infringement against the use of our High Pressure Oil System.

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**TONNAGE MOVEMENT, PORT OF SAN FRANCISCO,  
FOR MONTH OF JUNE, 1912, COMPILED BY  
S. F. CHAMBER OF COMMERCE, MARINE  
DEPARTMENT**

Arrivals		
From—	Tons. Steam.	Tons. Sail.
Hongkong .....	22,598	
Coast .....	339,869	37,727
British Columbia .....	22,059	
Hawaiian Islands .....	22,916	1,866
Alaska .....		554
Europe .....		2,715
China .....	27,952	
South America .....	3,283	
Philippine Islands .....	3,653	
Australia .....	7,941	
Mexico .....	21,631	
United Kingdom and Continent .....		
Eastern ports .....	1,406	
Pacific Islands .....		
Africa .....		
Australia .....	7,491	3,632
Germany .....	3,070	
Holland .....	3,396	
Japan .....	7,877	
Panama .....	20,326	
Peru .....	1,512	

Departures		
Hongkong .....	27,906	
Coast .....	356,022	45,434
British Columbia .....	25,860	
Hawaiian Islands .....	40,073	2,160
Alaska .....	13,176	
Europe .....	9,190	
South America .....	3,653	
Philippine Islands .....	3,844	
Mexico .....	7,480	
Pacific Islands .....		614
Various .....	4,033	
Japan .....	7,114	
Panama .....	18,882	
Peru .....	1,512	
Chile .....	3,042	

Receipts of Lumber		
From—	Feet.	
Coast .....	27,617,000	
Interior .....	1,500,000	
Oregon and Washington .....	61,297,000	
To—	Feet.	
Foreign ports .....	633,000	
Hawaiian Islands .....	206,000	

Receipts of Grain			
	Interior.	Coast.	Ore.-Wash.
Flour, ¼-sks. ....	90,387		309,280
Wheat, ctls. ....	13,453		234,800
Barley, ctls. ....	164,779	3,615	
Oats, ctls. ....	10,523		
Corn, ctls. ....	14,628		
Bran, sks. ....	2,147		13,265
Middlings, sks. ....	2,945		2,127

Shipments from San Francisco	
Flour, lbs. ....	28,046
Corn, ctls. ....	18,593
Wheat, ctls. ....	280
Barley, ctls. ....	76,686
Beans, ctls. ....	5,003

**COASTWISE AND FOREIGN COMMERCE OF TACOMA,  
WASH., MONTH OF MAY, 1912**

Articles—	Value.
Principal foreign shipments—	
Flour, 94,023 bbls. ....	\$ 382,012
Wheat, 101,657 bu. ....	101,695
Oats, 286 tons ....	8,161
Cotton, raw, 17,085 bales. ....	841,439
Tobacco, 818,868 lbs. ....	92,040
Machinery, 1,997 pkgs. ....	135,150
Plaster, 1,350 tons. ....	9,713
Acetate of lime, 17,060 sacks. ....	5,800
Lumber, 10,257,070 feet ....	187,886
Boots and shoes, 95 cases. ....	10,328
Baled hay, 266 tons ....	6,513
Milk, condensed, 6,169 cases. ....	16,865
Domestic and sheeting, 1,499 bales. ....	109,242
Box shooks, 8,460 bdls. ....	6,145

Sewing machines, 3,663 crates. ....	35,556
Cascara bark, 744 bags ....	2,929
Automobiles, 49 ....	44,605
Copper 38,104 ingots ....	134,503
Paraffin wax, 2,000 bbls. ....	48,616
Steel rails, 626 tons. ....	52,421
Miscellaneous to British Columbia ....	30,133
Miscellaneous to Japan, China, Manilla, South America and Europe .....	335,801

Total foreign shipments.....\$ 2,643,984

Coastwise shipments—	
Flour, 24,430 bbls. ....	\$ 113,856
Lumber, 6,898,524 feet ....	72,939
Coal, 7,466 tons. ....	23,597
Wheat, 135,476 bu. ....	186,089
Oats, 439 tons ....	15,190
Bullion, smelter products ....	750,697
Box shooks, 41,390 bdls. ....	20,150
Feed stuffs, 1,681 tons. ....	42,024
Hay, 444 tons ....	9,123
Milk, condensed, 2,067 cases. ....	9,701
Salmon, 200 cases ....	900
Beer, 1,638 bbls. ....	10,654
Miscellaneous to Alaska ....	220,921
Miscellaneous to California, Honolulu and New York .....	66,248

Total coastwise shipments.....\$ 1,544,422

Total foreign shipments ..... 2,643,984

Total shipments .....\$ 4,188,406  
Previously reported ..... 14,820,286

Grand total exports for 5 months 1912.....\$19,008,692

Coastwise receipts—	
Alaska .....	\$ 667,985
California .....	411,300
New York .....	19,197

Total coastwise receipts .....\$ 1,098,482

Foreign receipts—	
British Columbia .....	\$ 160,203
China and Japan .....	1,272,597
South America .....	55,273

Total foreign receipts..... 1,488,073

Total coastwise receipts ..... 1,098,482

Total receipts ..... 2,586,555  
Previously reported ..... 8,413,773

Grand total receipts for 5 months 1912.....\$11,000,328

Shipping record—			
	1912.	1911.	
Deep sea arrivals, No. ....	121	79	
Deep sea departures, No. ....	122	78	
Inward registered tonnage, tons. ....	282,633	184,959	
Outward registered tonnage, tons. ....	290,215	167,153	
Inward cargo tonnage, tons. ....	52,710	30,693	
Outward cargo tonnage, tons. ....	85,917	79,000	

**PORTLAND**

We publish herewith the domestic and foreign lumber shipments from Portland, the domestic and foreign shipments of grain and the principal foreign and domestic imports during the month of June, 1912.

**Lumber Exports from Portland**

Foreign.			
June.	Value.	Since Jan. 1, 1912.	Value.
Feet.		Feet.	
12,562,765.....	\$ 140,121	48,990,596.....	\$ 529,687
Domestic.			
14,463,719.....	144,637	30,861,912.....	836,939

**Wheat Exports from Portland**

Foreign.			
Bushels.	Value.	Bushels.	Value.
.....		2,603,966.....	\$2,317,947
Domestic.			
271,994.....	\$ 255,684	1,630,927.....	1,569,716

**Flour Exports from Portland**

Foreign.			
Barrels.	Value.	Barrels.	Value.
81,204.....	\$ 324,989	376,647.....	\$1,500,490
Domestic.			
26,327.....	126,370	190,498.....	821,524

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in  
**Cattle, Farming, Mining, Timber.**

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And Minneapolis and St. Paul  
TWO DAILY THROUGH TRAINS

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COAST  
LIMITED**



**ATLANTIC  
EXPRESS**  
(Northern Pacific  
Express when  
westbound)

Via North-Western Line  
from St. Paul, through  
Milwaukee, using new C.  
& N. W. Station, Canal and  
Madison Sts., Chicago.

Via Burlington Line  
from St. Paul, down the  
Mississippi, using Union  
Station, Canal and Adams  
Sts., Chicago.

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A. D. CHARLTON, A. G. P. A., Portland, Ore.

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Tonnage Entered at Portland		
	Vessels.	Tons.
June, 1912	80	103,117
June, 1911	78	87,187

Tonnage Cleared from Portland		
	Vessels.	Tons.
June, 1912	80	103,415
June, 1911	79	90,305

Foreign Imports at Portland		
	June.	Since Jan. 1, 1912.
Cement, barrels		12,600
Coal, tons	1,164	5,891
Coffee, sacks	497	3,004
Curios and mdse., pkgs.	881	12,195
Grain bags, bales		1,267
Hemp, bales		6,536
Hardwood, feet	1,664,188	3,287,997
Iron, pkgs.		6,419
Peanuts, bags		9,660
Provisions, pkgs.	377	9,328
Rice, bags		8,714
Sugar, bags		575
Sulphur, tons	2,253	3,782
Taploca, bags		1,295
Tea, pkgs.		915

Domestic Imports at Portland by Water		
	June.	Since Jan. 1, 1912.
Asphaltum, barrels	13,067	45,437
Canned goods, cases	8,099	60,545
Cement, sacks	213,538	1,563,350
Electrical goods, pkgs.	1,013	7,412
Hardware, tons	1,424	12,953
Iron, pkgs.	6,228	60,238
Liquors, cases	1,303	4,674
Machinery, pkgs.	321	2,333
Merchandise, tons	4,251	18,019
Miscellaneous, pkgs.	44,610	220,053
Oil, barrels	432,050	2,291,457
Paints and oils, pkgs.	8,975	45,662
Salt, sacks	26,999	148,247
Sugar, sacks	63,742	153,458
Tobacco, pkgs.	1,026	10,301

**OFFICIAL STATEMENT OF THE CUSTOMS BUSINESS OF THE DISTRICT OF LOS ANGELES, CAL., DURING THE MONTH OF MAY, 1912**

Collections	\$ 48,687.29
Imports	166,356.00
Exports	19,526.00

Principal Imports and Exports by Countries		
	Imports.	Exports.
Belgium	744	
France	15,985	
Germany	8,273	
Italy	5,852	
Switzerland	4,806	
England	6,446	
Scotland	10,072	
Ireland	3,055	
Canada	4,007	\$17,728
Guatemala	5,700	
Mexico	9,604	
Cuba	6,058	
Chile	23,000	
East Indies, Dutch		1,686
Hongkong	13,712	
Japan	45,511	
Australia		112
Philippine Islands	781	
Other countries	2,750	
Totals	\$166,356	\$19,526

Principal Imports		
Lumber and cabinet woods		\$ 38,298
Nitrate of soda, 960 tons		23,000
Spirits, wines, etc., 7,465 gals.		12,419
Cleaned rice, 247,241 lbs.		10,572
Cigars		6,839
Cheese, 28,530 lbs.		5,621
Crude sulphur, 250 tons		4,046
All other articles		65,561
Total		\$166,356

Dutiable	\$99,231
Free of duty	67,125
Total	\$166,356

Exports to Non-Contiguous Territory of the United States		
Hawaii—		
Crude oil	672,000 gals.	\$12,800
Distillate	21,600 gals.	3,888
Miscellaneous		82
Total	693,600 gals.	\$16,770

Movement of Vessels in Foreign Trade		
Entrance—		Net tonnage
No.		
5 American		10,277
1 British		4,079
1 German		4,032

1 Norwegian	3,042
8 Total	21,430
Clearance—	
No.	Net tonnage
2 American	5,071
2 Total	5,071
Passengers arrived	206
Passengers departed	23
Movement of Vessels in Domestic Trade	
Arrived	230
	Net tonnage
Steamers	203,618
Sail	7,965
Total	211,583
Departed	202
	Net tonnage
Steamers	157,962
Sail	8,312
Total	166,274
Number of seamen arrived	9,807
Number of seamen departed	6,953
Number of passengers arrived	13,980
Number of passengers departed	16,064

**RACINE BOAT & AUTO CO. CARRY LARGE STOCK**

For the past ten years a large stock of Racine rowboats has been carried ready for immediate delivery in Seattle by the Racine Boat & Auto Company. They have also one of the largest stock of motor boat and gas engine accessories in the West. Pioneers in this line, they have gained that large experience which only years in business can yield, and their line is particularly well chosen to meet the demands of the gas boat trade.

This company has developed a very successful "low voltage" electric storage battery lighting plant, which is particularly desirable for commercial craft, as well as the various sized motor boats. They number among their customers many of the largest fish companies of the Northwest, as well as a great many individual boat owners running fishing, towing and passenger craft.

The "Sterling" and "Wolverine" marine gas engines, considered among the highest grade heavy duty machines of this type, are carried in stock by the Racine Boat & Auto Company. The evolutions which the gas engines have undergone have produced a machine as near perfect as it is possible to make a power plant. It is generally conceded that gas engines of the types of the "Sterling" and "Wolverine" have practically supplanted steam as motive power for commercial and pleasure boats up to 110 to 115 feet. The "Sterling" and "Wolverine" engines have acquired an enviable reputation throughout the world.

**WRECKS, CASUALTIES AND MISCELLANEOUS REPORTS**

"BERENGERE," Fr. ship, from Rotterdam December 2 for San Francisco, arrived at Hobart May 24th with some small damages, and sailed May 28th.

"STANDARD," sp., from San Francisco April 13th for Nushagak, parted anchor chains at the mouth of the Nushagak river and had to sail up. She was beached, but later floated apparently without damage.

"TEMPLE E. DORR," str., at San Francisco June 29th, from San Pedro, reports having struck a submerged rock off Pt. Sur, causing vessel to leak slightly.

"W. G. IRWIN," brig., lying in the channel between Third and Fourth streets, San Francisco, on July 1st, with cargo of lime, was on fire in the hold. The hatches were battered down and on July 8th it was reported that the fire was extinguished. Damage not known.

"CITY OF PANAMA," str., from San Francisco July 5th for Mexican and Central American ports, reported by wireless on the night of the 6th that the machinery was disabled and the steamer helpless. The steamer "Rose City" was sent from San Pedro to her assistance.

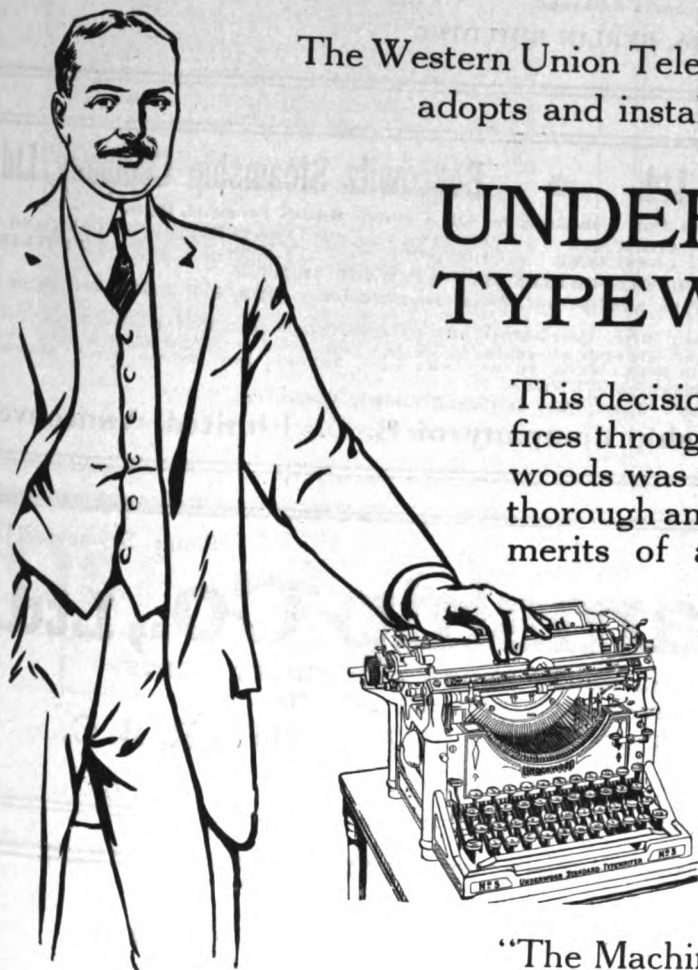
Over 50,000 gross tons of sailing vessels were lost at sea during the year, equivalent in tonnage to vessels built of this class for the last three years.

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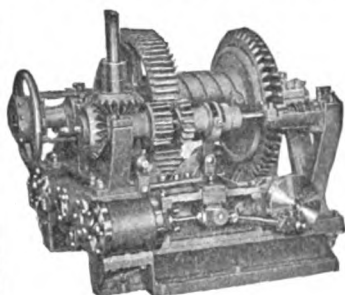
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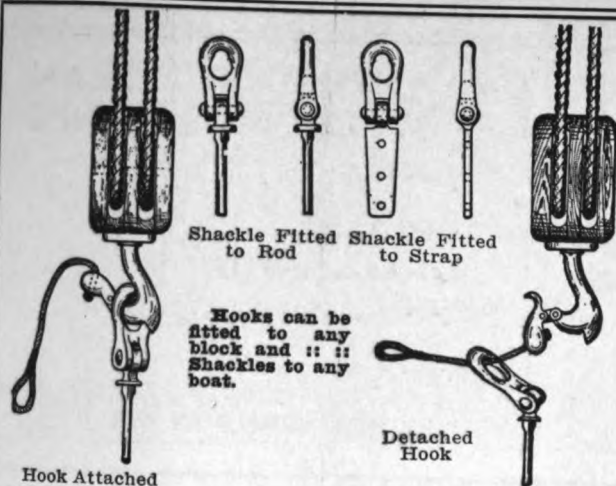
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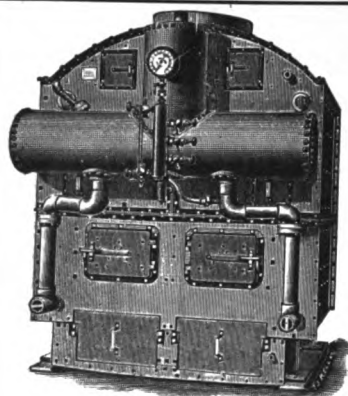
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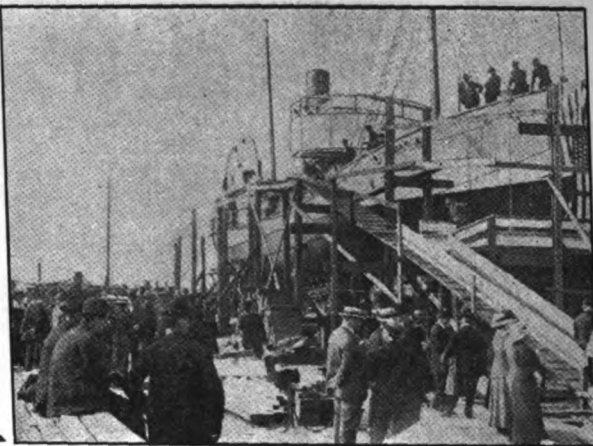
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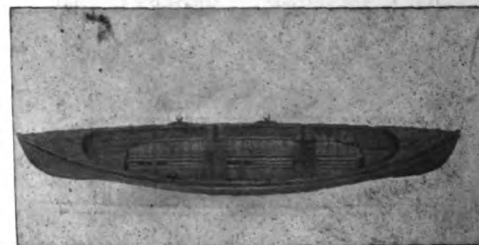
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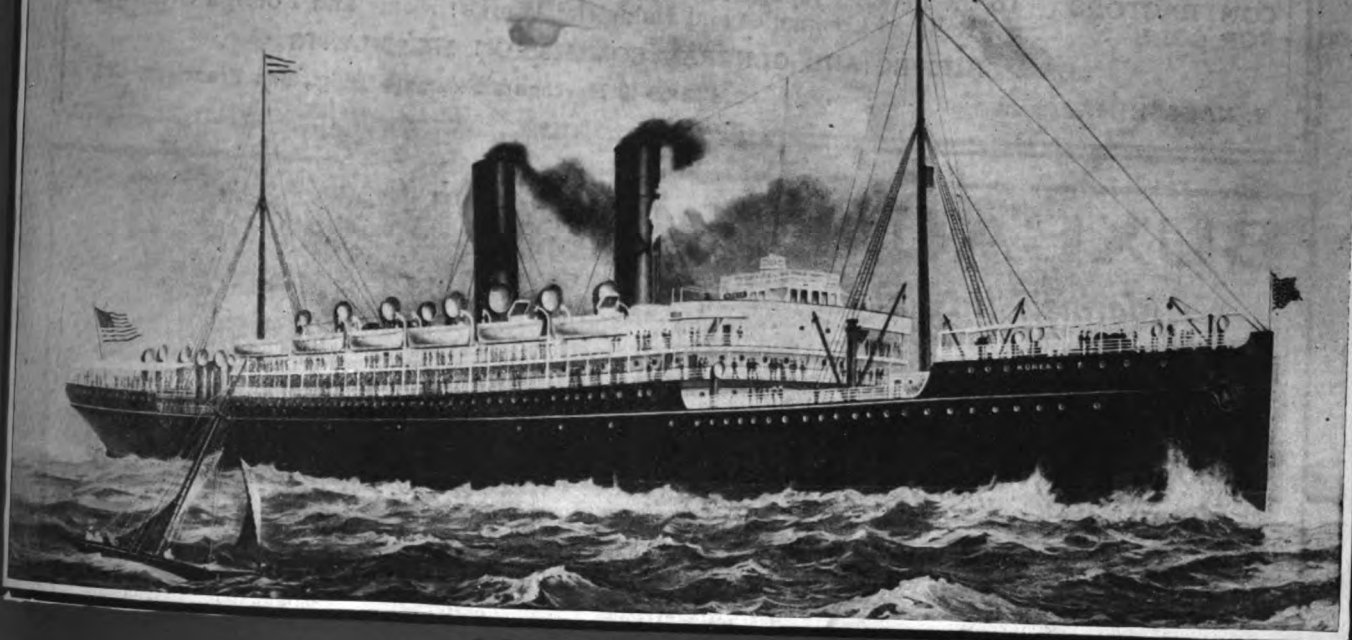
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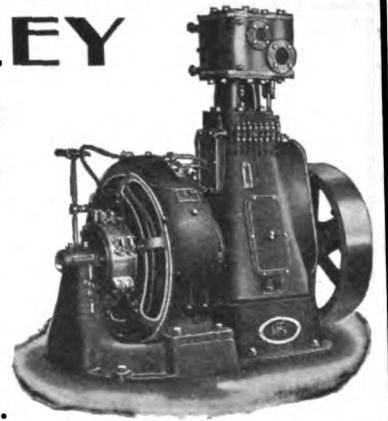
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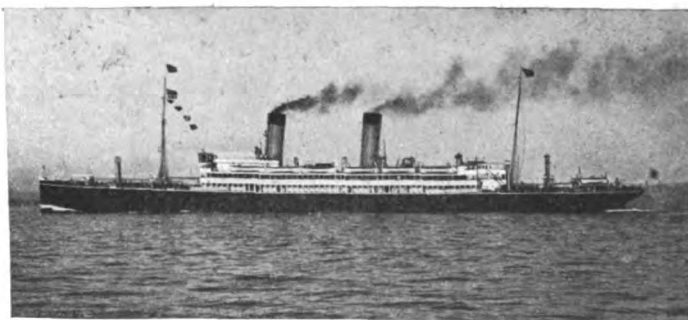
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# PACIFIC MARINE REVIEW

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VOL. IX

SEATTLE, WASH., U. S. A., AUGUST, 1912.

No. 8

## PANAMA CANAL ACT H. R. 21969 IN DEBATE IN THE U. S. SENATE

By H. B. Jayne, Washington, D. C., July 17

**T**HIS has been made the unfinished business of the Senate and is likely to be the subject of prolonged and keenly contested debate. The protest by Great Britain to Clause 5:

"That the President is hereby authorized to prescribe and from time to time change the tolls that shall be levied by the Government of the United States for the use of the Panama Canal: Provided, that no tolls, when prescribed as above shall be changed, except six months' notice thereof shall have been given by the President by proclamation. No tolls shall be levied upon vessels engaged in the coastwise trade of the United States. Tolls may be based upon gross or net registered tonnage, displacement tonnage, or otherwise, and may be based on one form of tonnage for warships and another for ships of commerce. When based upon net registered tonnage for ships of commerce the tolls shall not exceed one dollar and twenty-five cents per net registered ton; nor be less than the estimated proportionate cost of the actual maintenance and operation of the canal, subject, however, to the provisions of Article Nineteen of the convention between the United States and the Republic of Panama, entered into November 18th, 1903. No tolls shall be levied upon vessels of American registry engaged in the foreign trade if the owners agree that such vessels may be taken and used by the United States in time of war or other public emergency, in the discretion of the President, upon payment to the owners of the fair actual value at the time of the taking; and if there shall be a disagreement as to the fair actual value of the same at the time of the taking between the United States and the owners, then the same shall be determined by two disinterested appraisers, one to be appointed by each of the said parties, they at the same time selecting a third, who shall act in said appraisal in case the two fail to agree; and the decision of any two of the appraisers shall be final and conclusive: Provided, however, that under regulations prescribed by the President a vessel paying toll going through the canal in ballast shall, on its return trip through the canal laden with cargo, be entitled to receive a rebate of fifty per centum of the tolls just previously paid going through in the opposite direction without cargo. If the tolls shall not be based upon net registered tonnage, they shall not exceed the equivalent of one dollar and twenty-five cents per registered ton as nearly as the same may be determined, nor be less than the estimated proportionate cost of the actual maintenance and operation of the canal. The toll for each passenger shall not be more than one dollar and fifty cents."

which it claims to be an undue discrimination in favor of American vessels and a violation of Article III, Clause 1.

"The Canal shall be free and open to the vessels of commerce and of war of all nations observing these Rules, on terms of entire equality, so that there shall be no discrimination against any such nation, or its citizens or subjects, in respect of the condition or charges of traffic, or otherwise. Such conditions and charges of traffic shall be just and equitable."

has complicated the situation.

Great Britain's contention is supported by many of the more experienced and conservative members of the Senate, such as Burton of Ohio, and Root of New York, a former Secretary of State, who even if they might individually condemn the text of the Treaty and its indefinitely, properly recognized that the obligations of a Treaty, properly interpreted, must be observed. It is difficult to follow upon what lines Great Britain regards the exemption from tolls of American vessels in the Coastwise trade, from which foreign vessels are excluded, as an undue dis-

crimination and a violation of Article 3. Possibly she may contend, for example, that a British vessel on voyage from a Canadian Pacific port to New York, with a cargo of lumber, paying canal dues, would be deprived of its advantages of lower cost of transportation and a set off to tariffs, if American vessels engaged in domestic trades are exempted from tolls, as between an American vessel with a cargo of lumber from a Puget Sound port to New York.

This contention will obviously affect the determination of those who seem to think that in order to secure a sufficient competition with trans-continental rail lines, it is necessary to both exclude railway controlled and railway allied steamship lines from navigating the canal and to exempt from tolls American vessels engaged in domestic trades, and many members of both the Senate and the House, who are irrevocably committed to such legislation, which has also been adopted in the Democratic National program, will refuse to retire from that position.

Personally, we resent the interference of Great Britain in any domestic issue of the United States and question its wisdom in pressing a point in which their interest is so remote, on the other hand, as experienced and conservative members of the Senate contend, and as the country at large must admit, a nation such as the United States cannot repudiate sacred and honorable treaty obligations.

Personally, we have never thought, and President Dearborn of the American-Hawaiian Lines has so testified before committees, that vessels in the coastwise trade require exemption from reasonable tolls, which they can well afford.

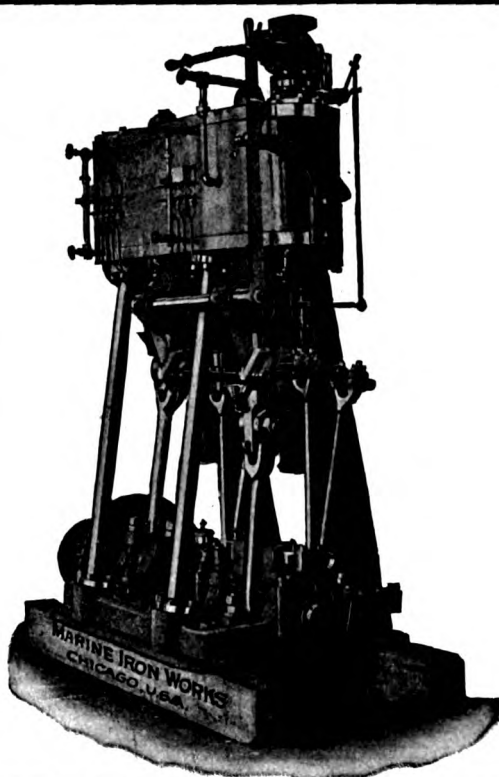
It is admitted in both the Senate and the House that immediate legislation is imperative, inasmuch as the Canal will shortly be open to navigation. It seems inevitable that the bill as passed by the House will be considerably amended in the Senate, after which it must go to conference between both, but there is a determination to pass some legislation even if it is the subject of future reference to arbitration at the Hague. As will be seen from the full text of the treaty hereto subjoined, the treaty is for no specified term (as for example in the treaty between Great Britain and Japan), and includes no provision for its expiration, denunciation and abrogation.

Treaty between the United States and Great Britain to facilitate the construction of a ship canal. Signed at Washington, November 18th, 1901; ratification advised by the Senate December 16th, 1901; ratified by the President December 26th, 1901; ratified by Great Britain January 20th, 1901; ratifications exchanged at Washington, February 21st, 1902; proclaimed February 22nd, 1902.

By the President of the United States of America. A Proclamation.

Whereas, a convention between the United States of America and the United Kingdom of Great Britain and Ireland, to facilitate the construction of a ship canal to connect the Atlantic and Pacific Oceans, by whatever route may be considered expedient, and to that end to remove any objection which may arise out of the convention of the 19th of April, 1850, commonly called the Clayton-Bulwer treaty, to the construction of such canal under the auspices of the Government of the United States, without impairing the "general principle" of neutralization established in Article VIII of that Convention, was concluded and signed by their respective plenipotentiaries at the city of Washington on





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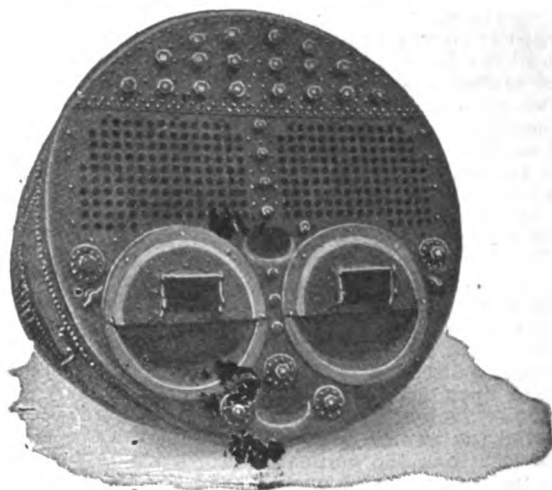
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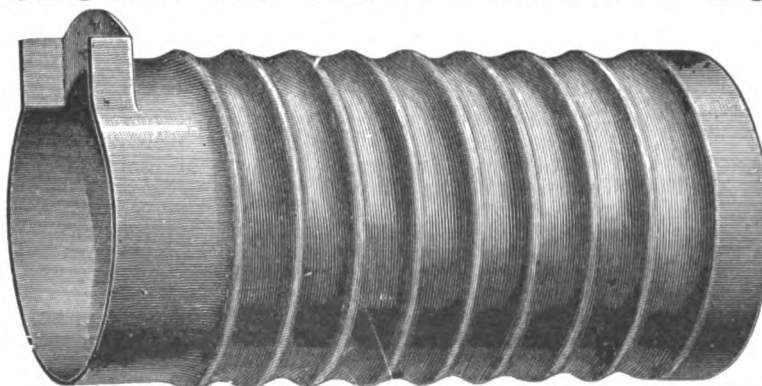
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the 18th of November, 1901, the original of which convention is word for word as follows:

The United States of America and His Majesty Edward VII, of the United Kingdom of Great Britain and Ireland, and of the British Dominions beyond the Seas, King, and Emperor of India, being desirous to facilitate the construction of a ship canal to connect the Atlantic and Pacific Oceans, by whatever route may be considered expedient, and to that end to remove any objection which may arise out of the convention of the 19th of April, 1850, commonly called the Clayton-Bulwer treaty, to the construction of such canal under the auspices of the Government of the United States without impairing the "general principle" of neutralization established in Article VIII of that convention, have for that purpose appointed as their plenipotentiaries:

The President of the United States, John Hay, secretary of state of the United States of America, and His Majesty Edward VII of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas, King, and Emperor of India; the Right Honorable Lord Pauncefote, G. C. B., G. C. M. G., His Majesty's ambassador extraordinary and plenipotentiary to the United States. Who, having communicated to each other their full powers which were found to be in due and proper form, have agreed upon the following articles:

Article I.—The high contracting parties agree that the present treaty shall supersede the afore-mentioned convention of the 19th of April, 1850.

Article II.—It is agreed that the canal may be constructed under the auspices of the Government of the United States, either directly at its own cost, or by gift or loan of money to individuals or corporations, or through subscription to or purchase of stock or shares, and that, subject to the provisions of the present treaty, the said government shall have and enjoy all the rights incident to such construction, as well as to the exclusive right of providing for the regulations and management of the canal.

Article III.—The United States adopts, as the basis of the neutralization of such ship canal, the following rules, substantially as embodied in the convention of Constantinople, signed the 28th of October, 1888, for the free navigation of the Suez Canal, that is to say:

1. The canal shall be free and open to the vessels of commerce and of war of all nations observing these rules, on terms of entire equality, so that there shall be no discrimination against any such nation, or its citizens or subjects, in respect of the conditions or charges of traffic, or otherwise. Such conditions and charges of traffic shall be just and equitable.

2. The canal shall never be blockaded, nor shall any right of war be exercised nor any act of hostility be committed within it. The United States, however, shall be at liberty to maintain such military police along the canal as may be necessary to protect it against lawlessness and disorder.

3. Vessels of war of a belligerent shall not revictual nor take any stores in the canal except so far as may be strictly necessary; and the transit of such vessels through the canal shall be effected with the least possible delay in accordance with the regulations in force, and with only such intermission as may result from the necessities of the service.

Prices shall be in all respects subject to the same rules as vessels of war of the belligerents.

4. No belligerent shall embark or disembark troops, munitions of war, or warlike materials in the canal, except in case of accidental hindrance of the transit, and in such case the transit shall be resumed with all possible dispatch.

5. The provisions of this article shall apply to waters adjacent to the canal within three marine miles of either end. Vessels of war of a belligerent shall not remain in such waters longer than twenty-four hours at any one time, except in case of distress, and in such case shall depart as soon as possible; but a vessel of war of one belligerent shall not depart within twenty-four hours from the departure of a vessel of war of the other belligerent.

6. The plant, establishments, buildings and all works necessary to the construction, maintenance and operation of the canal shall be deemed to be part thereof, for the purposes of this treaty, and in time of war as in time of peace shall enjoy complete immunity from attack or injury by belligerents and from acts calculated to impair their usefulness as part of the canal.

Article IV.—It is agreed that no change of territorial sovereignty or of the international relations of the country

or countries traversed by the before-mentioned canal shall affect the general principle of neutralization or the obligation of the high contracting parties under the present treaty.

Article V.—The present treaty shall be ratified by the President of the United States, by and with the advice and consent of the Senate thereof, and by His Britannic Majesty; and the ratifications shall be exchanged at Washington or at London at the earliest possible time within six months from the date hereof.

In faith whereof the respective plenipotentiaries have signed this treaty and thereunder affixed their seals.

Done in duplicate at Washington the 18th of November, in the year of our Lord 1901.

John Hay (Seal),  
Pauncefote (Seal).

And whereas, the said convention has been duly ratified on both parts, and the ratification of the two Governments were exchanged in the City of Washington on the 21st day of February, 1902;

Now, therefore, be it known that I, Theodore Roosevelt, President of the United States of America, have caused the same convention to be made public, to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof.

In witness whereof I have hereunto set by hand and caused the seal of the United States to be affixed.

Done at the City of Washington this 22nd day of February, in the year of our Lord 1902, and of the Independence of the United States the one hundred and twenty-sixth.

(Seal) Theodore Roosevelt.

By the President.

John Hay, Secretary of State.

In this immensely complicated problem, in fact, more intricate than any mere sketch of the difference of opinion can possibly reveal, one question in particular looms, in my judgment, glaringly through all discussions, namely: "Is it possible that in reference to Article III, Paragraph 1, any limitation in the meaning of this paragraph was imposed upon the United States of America, the builder, owner and operator of the canal in its constitutional right over the canal, and as such is included among nations to be 'treated with equality' under the treaty terms?"—Ed. Note.

We quote further from the Panama Canal Act, H. R. 21969:

Section II.—That no ship owned, chartered, operated, or controlled by a railroad company, or in which any railroad company has any interest whatsoever (by stock ownership or otherwise, either directly or indirectly, through any holding company, or by stockholders or directors, in common or in any other manner), shall be permitted to enter or pass through the Panama Canal if engaged in the coastwise trade between ports of the United States. That any ship of American registry, however owned or controlled, shall be permitted to operate through the canal in trans-oceanic trade to and from oriental or European countries; said vessel on its way to and from said foreign countries shall be permitted to do a coastwise trade between ports of the United States and intermediate foreign ports; Provided, that this shall not be permitted to any ship owned or controlled in whole or in part by any railroad company, except those engaged in said trans-oceanic trade, nor shall any coastwise trade be done by any such ship unless on a voyage to or from such trans-oceanic ports, and not to those of Canada, Mexico, or any Central or South American port: Provided further, that no such railroad owner or controlled ship shall pass through the canal unless at least fifty per centum of its cargo, in tonnage, is destined to or shipped from oriental or European ports.

That Section six of the act to regulate commerce, approved February 4th, 1887, as heretofore amended, is hereby amended by adding a new paragraph at the end thereof, as follows:

When property may be or is transported from point to point in the United States by rail and water through the Panama canal or otherwise, the transportation being by a common carrier or carriers, and not entirely within the limits of a single state, the Interstate Commerce Commission shall have jurisdiction of such transportation and of the carriers, both by rail and by water, which may or do engage in the same, in the following particulars, in addition to the jurisdiction given by the act to regulate commerce, as amended June 18th, 1910:

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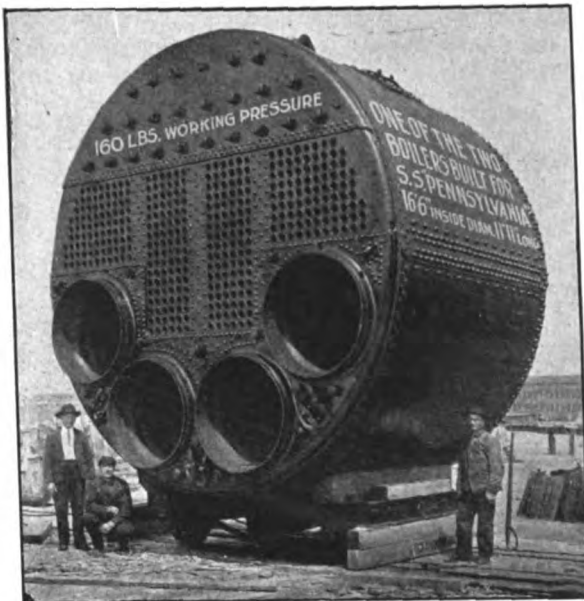
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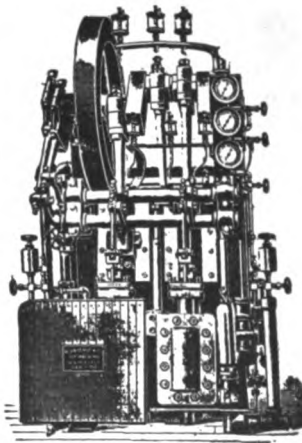
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(a) To establish physical connection between the lines of the rail carrier and the dock of the water carrier by directing the rail carrier to make suitable connection between its line and a track or tracks which have been constructed from the docks to the limits of its right of way, or by directing either or both the rail and water carrier, individually or in connection with one another, to construct and connect with the lines of the rail carrier a spur track or tracks to the dock. This provision shall only apply where such connection is reasonably practicable, can be made with safety to the public, where the public, in the judgment of the commission, will be benefited by such connection, and where the amount of business to be handled is sufficient to justify the outlay.

The commission shall have full authority to determine the terms and conditions upon which these connecting tracks, when constructed, shall be operated, and it may, either in the construction or the operation of such tracks, determine what sum shall be paid to or by either carrier. The provisions of this paragraph shall extend to cases where the dock is owned by other parties than the carriers involved.

(b) To establish through routes and maximum joint rates between and over such rail and water lines, and to determine all the terms and conditions under which such lines shall be operated in the handling of the traffic embraced.

(c) To establish maximum proportional rates by rail to and from the ports to which the traffic is brought, or from which it is taken by the water carrier, and to determine to what traffic and in connection with what vessels and upon what terms and conditions such rates shall apply. By proportional rates are meant those which differ from the corresponding local rates to and from the port and which apply only to traffic which has been brought to the port or is carried from the port by a common carrier by water.

(d) If any rail carrier subject to the act to regulate commerce enters into arrangements with any water carrier operating from a port in the United States to a foreign country, through the Panama Canal or otherwise, for the handling of through business between interior points of the United States and such foreign country, the Interstate Commerce Commission may require such railway to enter into similar arrangements with any or all other lines of steamships operating from said port to the same foreign country."

THE following which was sent to this office recently offers food for considerable thought:

"In the general press discussions of railroad owned or controlled ships going through the Panama Canal, there has been a wide diversity of opinion. The following illustrations might be of interest as to how the 50 per cent restriction works:

First. Suppose Congress passes a law that no railroad owned or controlled ships shall be permitted to go through the canal except strictly in the foreign trade.

Let us illustrate: Two ships are in the harbor of Hongkong; one an American liner named the "George Washington," and another a British steamer, of private ownership, called the "King Edward VII," both of 10,000 tons cargo capacity. These two ship load and clear for a voyage as follows: The "George Washington" via Manila, Kobe, Yokohama, Honolulu, San Francisco, and via the canal to New York. The British steamer clears from Manila, Kobe, Yokohama, Honolulu, San Francisco, via the canal to New York, bound to Quebec. New York being the final destination of the American ship, and Quebec the final destination of the British ship. Under the law, the British ship can take on at China ports, Philippine ports and Japan ports for the Hawaiian Islands and American ports absolutely the same class of cargo as carried by the American ship. Both ships arrive at San Francisco at the same time, and there discharge their cargo for that port locally or for distribution by rail to interior points in the United States. At the time these ships are on the berth in San Francisco there is a demand in Canada and Atlantic seaboard territory for California canned products and California beans, and these articles are offering freely for shipment. Both ships have available 6,000 tons of

space. The American ship being a railroad owned or controlled ship cannot touch one pound of this cargo. The British ship, however, loads cargo for Canadian ports to the extent of 3,000 tons, and she also loads the balance of 3,000 tons with goods destined to interior eastern American cities such as Detroit, Cincinnati, Columbus, Toledo, etc., for there is nothing in the law which prohibits a British steamer loading in an American port with American products and discharging the same in a foreign port (such as Quebec) and then transporting these goods by rail for distribution in the United States. Has this British steamer any advantage over the American steamer? She has picked up Oriental cargo and laid it down in Honolulu, San Francisco and New York, and Canada. She has picked up cargo and filled the empty space available in San Francisco, and has earned the full potentiality of the ship, whereas the American ship proceeds, under the law, with empty space from San Francisco.

Second. Suppose that Congress passes a law permitting any ship of American registry, however owned or controlled, when engaged in transoceanic trade, to pass through the canal and do a coastwise business if at least fifty per cent of its cargo has been shipped from an Oriental port. Take the same illustration of the "George Washington" and the "King Edward VII." Conditions are exactly the same until the arrival of the ships in San Francisco, and the American ship had say 4,000 tons of Oriental cargo left on board destined to New York. The British ship will load, as previously stated, her full 6,000 tons of space, but the American ship will only be permitted to load 4,000 tons, leaving still a space of about 2,000 tons. Is there any advantage to the British ship?

Third. Take exactly the same case as in the second proposition when the ships arrive in San Francisco, but instead of each ship making 6,000 tons of space, each ship makes 3,000 tons of space. In other words, the American ship has on board, after touching at San Francisco, 7,000 tons of freight destined to New York City. Under the fifty per cent restriction the American ship could load the full 3,000 tons or the capacity of the ship. Under no restriction the British ship will load her 3,000 tons. Has the American ship any advantage over the British ship? No; the conditions are exactly the same.

So, it would appear that the only time these conditions are equal is where the American ship would take from the Orient to San Francisco a cargo which when discharged would leave space which would not exceed the amount of Oriental cargo destined to New York. Anything below this and the American ship would be at a disadvantage, and would have to leave San Francisco with empty space. In the seasonable conditions of the movement of tonnage this is absolutely impractical, for while there are times this can be done, there are other times it cannot. An occasion might arise where both ships arriving at San Francisco would discharge their entire cargo, such as a rush of the new tea crops from the Orient to jobbers in the United States, when the goods would be discharged in San Francisco and distributed rapidly by rail to all interior points in the United States. In this case the British ship could load a full cargo if offered, whereas the American ship could not touch a pound of cargo offering from the Pacific to the Atlantic Coasts. Is there any advantage to the British ship in this proposition?

Now, let us take the reverse of this situation:

First. Suppose the "George Washington" is loading outward from New York City to the Orient and touching in reverse order the ports of call as noted above; and the British ship, the "King Edward VII" is clearing from Quebec and touching at Boston and New York and then



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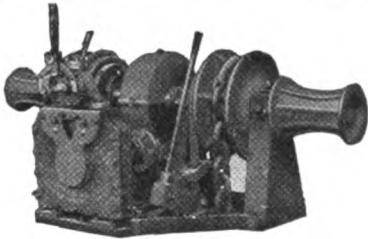
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proceeding on the same voyage via Vancouver and the Orient instead of via San Francisco. Let us assume first that heavy freights are offering for the West Coast of the United States and Canada and very light freights are offering for the Orient. For the Oriental business the two ships are competing. The law does not permit the railroad owned ship to handle any coastwise cargo. The British ship, on the contrary, loads in Boston and New York, in addition to the Oriental freight she is able to get, general merchandise for the ports of British Columbia and Northwest Canada, as well as general merchandise for cities in Washington, Idaho and Montana, as there is no law prohibiting a foreign ship loading in an American port, discharging in a foreign port and distributing its cargo by rail to interior cities of the United States. At Vancouver and Puget Sound ports the British ship can obtain flour and lumber destined to Japan and Oriental ports. There is no flour or lumber shipped from San Francisco to Oriental ports. There is no business originating in San Francisco for Oriental ports except a small local business not to exceed 10,000 tons a year. Has the British ship any advantage? The American ship practically leaves New York with space and is unable to complete her cargo at her Pacific Coast port of call as against the more active ports of call of the northwest, where the British ship is able to utilize the space in the ship by picking up cargo to continue the trans-Pacific voyage.

Second. Suppose the same conditions prevail, except that the provision of the bill is law which permits fifty per cent of cargo to be carried coastwise in an American railroad owned ship provided an equal amount is loaded for the Orient, and cargo to the Orient is offering sufficient to half fill the ship and freely to the coast. The American ship then clears on her voyage with 5,000 tons of Oriental cargo and 5,000 tons of coastwise cargo for San Francisco, and suppose that just prior to sailing a shipper cancels 1,000 tons of Oriental cargo. The provision of the bill, if enacted into statute law, is mandatory, and that American ship cannot go through the canal because she has more coast wise cargo than her fifty per cent allowance. She is a passenger ship and must sail on scheduled date, and there is nothing else to do but to take out 1,000 tons of coastwise to comply with the fifty per cent provision in the law. Is such a condition in actual operation practical, and how long would shippers stand for their cargo being taken out of a ship and remain on the deck two weeks longer for a succeeding ship? Meanwhile the British ship loads as in the first instance and proceeds on her voyage unmolested, with the right to use the full potentially of the ship.

A still further example of the way in which this fifty per cent restriction would work to the disadvantage of an American railroad owned ship, may be found in the fact that should a ship's clerk made an error of ten tons in figuring the ship's manifest, and this error should show, upon checking at the canal, ten tons more of coastwise than Oriental cargo, this American ship would be debarred the privilege of using the canal.

Finally. On the voyage from the Orient to San Francisco, the American ship would always have space in San Francisco for the following reasons: The American ship will unload freight at Honolulu and make space; she will unload local freight in San Francisco and make space; and will unload a certain amount of freight in San Francisco which is destined to points in the United States as far east as Kansas City, and no one can tell when loading in the Orient at many different ports of call, how to regulate the demands of the shippers to in any way pro-

vide for the conditions of the fifty per cent provision after the discharge has taken place in San Francisco, and therefore this American ship is always subject to the penalty of going through the canal with empty space. The condition of the cost of construction and operation of American ships are onerous enough, and these conditions should not be further enhanced by an unfair restriction in the movement of tonnage. The conditions from the Atlantic Coast to the Orient are entirely different from the movement from the Orient to the Atlantic Coast. In New York it is to be hoped that the ships will be loaded to their maximum capacity to the Orient, for the reason that they will not be able to fill at San Francisco the space made by the discharge of local cargo from New York to San Francisco, and further, the freights through the canal in the coastwise business will probably average from \$7.00 to \$9.00 per ton, whereas the freights from New York to Japan, China and Philippine ports will probably average from \$10.00 to \$16.00 per ton. Is there any logic in the carrier taking cheap freights to the coast, and then proceeding on a 7,500 mile voyage with a large amount of empty space instead of using every endeavor to fill the full 10,000 tons capacity of the ship with freight which pays for the continuous haul?

It is alleged that this fifty per cent proposition was put in to compel railroad owned or controlled ship to show good faith in the coastwise trade. It is not a question of good faith; it is a question of a restriction which makes practical operation impossible. American ships in the foreign trade in competition with cheap foreign tramps, must have all the assistance that is legal, just and proper, for, in the initiation of this New York Oriental Line, it may be a difficult thing to make the operations remunerative, but the venture is worthy of American enterprise and surely no one wants to see the American flag disappear from the ocean, when it can be retained without injury to the mercantile interests of this country by the provisions of Section 11 of the Senate bill, which provides as follows, without the necessity of the fifty per cent provision.

That no ship owned, chartered, operated, or controlled by a railroad company, or in which any railroad company has any interest whatsoever (by stock ownership or otherwise, either directly or indirectly, through any holding company, or by stockholders or directors in common, or in any other manner), shall be permitted to enter or pass through the Panama Canal if engaged in the coastwise trade between ports of the United States. That any ship of American registry, however owned or controlled, shall be permitted to operate through the canal in transoceanic trade to and from Oriental or European countries; said vessel on its way to and from said foreign countries shall be permitted to do a coastwise trade between ports of the United States and intermediate foreign ports: Provided, that this shall not be permitted to any ship owned or controlled in whole or in part by any railroad company, except those engaged in said transoceanic trade, nor shall any coastwise trade be done by any such ship unless on a voyage to or from such transoceanic ports, and not to those of Canada, Mexico or any Central or South American port."

The Harrison Line of steamers, of which Messrs. Balfour-Guthrie & Company are the Pacific Coast agents, will in the future include Seattle as a regular port of call, since outward as well as homeward bound cargoes for steamers on this route are now offering sufficient tonnage to induce this company to include Seattle in their schedule.

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Woolsey's Copper Paints are sold at a lower price on the Pacific coast than in any other place in the world, for the reason that we have no traveling men to pay in that territory and the amount saved in this way is deducted from our selling price and the consumers get the benefit.

With these facts in view, there should be no inducement for vessel owners to experiment with unknown compounds and taking a chance of having their vessel's bottoms eaten and destroyed by the Tereido worm and coated with barnacles, sea grass, etc.

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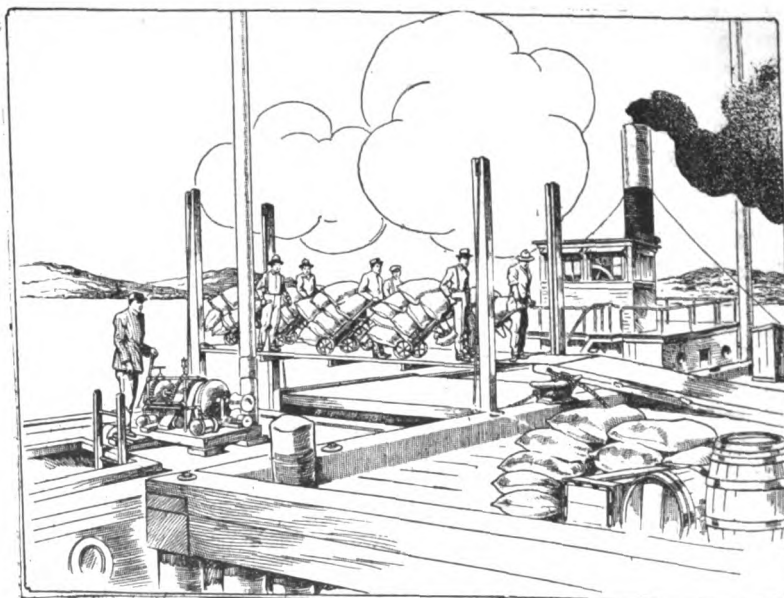
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WHEN WRITING TO ADVERTISERS, PLEASE MENTION THE PACIFIC MARINE REVIEW

# WASHINGTON STATE DELEGATION—ITS PERSONNEL AND EFFICIENCY

By H. B. Jayne

**H**AVING had considerable experience in connection with legislative work, both at Washington, D. C., and at Ottawa, Canada, and having returned to the United States after two years absence in Europe, where my work brought me in contact, in many capitals, with those prominent in legislation, commerce and finance, I may perhaps be permitted to record my impressions as received during fourteen days active residence in this capital, of the efficiency and personnel of the present delegation from the State of Washington, without presuming or aspiring to arrogate to myself the position of its censor.

I think I can safely and consistently state that the present delegation is more efficient and united than any delegation that preceded it. In justice to members of past delegations, it must be remembered that it is only within recent years that the public and daily press in the Pacific Northwest have fully recognized the folly and uselessness of sectional strife and interurban jealousies, which so long deprived the delegations from Washington, Oregon and California of any real power and influence, in contrast to their present potential position, the result of united action.

## Its Individual Membership

Senator Wesley L. Jones.—Senator Jones is indisputably a man of ability, prudence, courage and pertinacity, a man of strong personality, calm and dispassionate. He is an attractive speaker, as well as a keen and skillful debater, well versed in rules and procedure and always seems to command the attention and interest of the Senate. A hard worker, early and late, in my judgment possibly carrying to an extreme the gospel of hard work, as I believe that every man is improved by rest, recreation and change of thought, the Senator certainly protects and advances the many and complicated interests of his constituents and the state at large and also participates in greater national and international issues. Chairman of the Committee on Fisheries, a senior member of the Committee on Interoceanic Canals, and of the Committee on Public Lands, these important assignments and his great capacity for hard work, have enabled him to perform many and beneficial services in legislation, which is of vital interest to the district of Puget Sound and the territory of Alaska. I understand that Senator Jones has been adversely criticised for finally voting in favor of Mr. William Lorimer of Chicago, recently expelled from the Senate by a vote of 55 to 28, whose election is declared illegal by reason of bribery and corruption by his agents, a taint which attached to the seat more than to its occupant. Without expressing any opinion upon the merits of the case, as I do not pretend to have read the 800 pages of testimony therein, but which was unfairly prejudiced by the actions of President Taft, for which he was subsequently censured by the Senate, and of former President Roosevelt and grossly exaggerated and misrepresented by the press, I am convinced that Senator Jones, as a member of the second Committee of Investigation reviewed the evidence and became satisfied that the case was not incontestably sustained as against Lorimer and that Senator Jones simply and honorably voted with the "courage of his convictions." All honor to Senator Jones, whether his conclusions in fact were right or wrong, as a man who preferred "principle" to "political expediency," a temptation before which many of his colleagues fell. I trust and believe that all honorable and right thinking men, as well as the press of the state of Washington, will

honor and not condemn the honorable actions of an honorable man.

Senator Miles Poindexter.—A man of different temperament to Senator Jones, and possibly less experienced and settled in policies, Senator Poindexter is distinctly a man of talent, quick comprehension and a wide range of thought and activity.

Senator Poindexter, like his colleague, represents the whole state and no particular section or any particular interest.

Representative William E. Humphrey.—Representative Humphrey is so well known to the readers of the Pacific Marine Review for the last seven years for his activities in connection with shipping legislation, that it is unnecessary to emphasize the good work he has done and is doing.

I had not seen him for over two years, and it would seem that he has gained much in experience and has become one of the most efficient and useful members of the House of Representatives. I am disgusted to hear, through an independent source, that a certain narrow-minded and prejudiced section of citizens of Seattle condemn Representative Humphrey for alleged neglect of their particular interests, in his pursuit of the larger interests of the merchant marine and commerce, which are the real and permanent foundations of Seattle, Puget Sound and the state at large.

To such no doubt "petty patronage" is far more important than commerce and industry.

These are the type of "citizens" whose narrow views and sectional strife for many years deprived the delegations from Pacific Coast states of any real standing and influence at Washington, and it will be unfortunate for Seattle or any other Pacific Coast city if they again secure predominance.

Let those who pretend that their interests have been neglected by any single member of this Washington delegation, come to Washington, as I have done, and watch its members at work at the White House, in the Senate in the House and in their offices, during the present intense heat, and they will, if they have any sense of gratitude and decency, appreciate them and their work.

I wish to thank the members of the Washington delegation for many courtesies extended to me, not that anything unusual was asked or given, and again I emphasize that my domicile at Seattle has not in the remotest degree prejudiced me before members domiciled in eastern Washington. Personally, as long as we have active and efficient members as at present, I care not if they are domiciled in Spokane, Yakima, Seattle, Tacoma, or in any other city in the state.

In conclusion I express my appreciation of the courtesies and accommodation extended to me by House Press Gallery and its superintendent, Mr. Charles H. Mann, courtesies which are usually not granted except to daily newspapers.

## AMENDMENTS OF STEAMBOAT INSPECTION RULES AND REGULATIONS.

July 15th, 1912.

The Pacific Marine Review,  
Seattle.

Gentlemen:—

I understand that complaints have been filed by several steamship lines such as the "Kitsap," navigating inland waters, with the department, with senators and with representatives regarding the recent amendments made in steamboat inspection rules and regulations.



In considering these regulations all concerned should remember.

That public safety must be reasonably secured.

That no unreasonable burdens must be imposed upon steamship owners, particularly without adequate notice. That the saving of life in disasters in inclosed inland waters depends more upon the adequacy and sufficiency of life-saving equipment, than in disasters in open seaways, where and when live-saving equipment frequently cannot be used.

That without enacting rules and regulations for each and every case, it is difficult, if not impossible, to prepare rules and regulations which do not and shall not impose hardships upon individual cases.

That Supervising Inspector General George Uhler will leave Washington, after adjournment of congress and where his duties now detain him in connection with pending legislation, probably within thirty days from date hereof, for Puget Sound to personally investigate facts and circumstances governing these routes and the steamers engaged therein.

I therefore recommend suspension of action, recommendations and judgment, pending the arrival of the inspector general.

Yours faithfully,

H. B. JAYNE.

#### RECOGNITION OF NATIONAL LABOR

The subjoined, a veritable "multum in parvo" (much-in-little) is extracted from a recent speech by Representative

Sulzer, who introduced a bill creating a separate Department of Labor, which was passed by the House and awaits the action of the Senate. The creation of a Department of Labor and the appointment of a Minister of Labor is also seriously contemplated in Great Britain.—Ed. Note.

"I am no demagogue. I believe in fair play to all. I am opposed to anything that will estrange employer and employee, or cause a breach between capital and labor, and I am a friend of both. I want to give all an equal chance I want to do all I can while I live to make the world better and happier and more prosperous.

"I believe in the dignity of the toiler, the greatness of labor, and I want to do everything I can in Congress and out of Congress to protect its inherent rights and promote its general welfare for the lasting benefit of all the people. I want labor to have as much standing as capital in the halls of Congress and at the seat of government. We have a department to represent finance; we have a department to represent war; we have a department to represent diplomacy; we have a department to represent our internal affairs; we have a department to represent commerce; we have a department to represent justice—all supported by the wage earners—and in the name of common sense why should we not have a department to represent industrial peace as exemplified by labor, the most important, in its last analysis, of them all?"

## AIDS TO NAVIGATION IN CANADIAN WATERS

The efficient and excellent work the Dominion of Canada has accomplished and continues to accomplish in improving aids to navigation in Canadian waters is only too well known to steamship interests of the United States, and is highly appreciated by all of our shipmasters on the Pacific Coast, especially by those engaged in the northern trade passing, as they do, through waters of British Columbia.

It is apparent that our own work in this respect in Alaskan waters has been outclassed by the Dominion government in British Columbian waters, but we are at last commencing to awaken to the fact that aids to navigation are imperative along our rock bound shores. However, this awakening has come only after we have paid a heavy tribute in the deplorable loss of vessels in Alaskan territory and only after we have realized the resources and wealth of Alaska, necessitating an increased need for steamship services over these routes, as a result of this country's inevitable trade expansion. A great field is still open for us in its crying need for further and urgent improvements, both in regards to geodetic survey, as well as lighthouse services. The recent loss of our own lighthouse tender "Columbine," which became a total wreck in these waters, striking a rock, the existence of which was heretofore unknown, is but one example of the dangers in these waters, which if properly safeguarded would lighten the burden of those in charge of vessels in this trade and diminish the high rate of insurance our shipowners are paying, due principally to inefficient aids to navigation.

Long experience and exceptional skill is required of shipmasters in this trade for the safe navigation of our vessels and the aid of the government to further such safety in the future is likewise essential.

The valuable information contained in the subjoined article is extracted from "Canada, her Natural Resources, Navigation, etc.," compiled for the representatives, delegates and members of the 12th Congress of the Permanent International Association of Congresses recently held in Philadelphia, under instructions of the present minister of marine and fisheries and his deputy, by Mr. W. W. Stum-

bles, an officer of this important department, and which is of more than passing interest to the Pacific Marine Review.

The principal illustrations of buoys used by the Department of Marine and Fisheries in the publication above mentioned are reproduced here through the courtesy of the International Marine Signal Company, Ltd., of Ottawa, Canada, manufacturers of these buoys.

The United States Marine Signal Company, a sub-company of the International Marine Signal Company, Ltd., of Ottawa, have recently filled an order from the United States government for eleven gas and whistling buoys, some of which are now in service in Portland, Ore., and Portland, Me. These buoys are largely used by the United States and Canada, and also Brazil, Italy, India, Australia, Central America and other countries.—Ed. note.

THE aids to navigation in Canadian waters are established and maintained by the Department of Marine and Fisheries, headed by the Hon. J. D. Hazen, minister of this department. They consist of hydrographic surveys and charts, lighthouses, pole lights, concrete beacon and day beacons lighted and unlighted, and include acetylene lighted buoys, combined lighted acetylene and warning buoys, automatic whistling and bell buoys, conical and tubular buoys of large size, spar buoys and buoys of various shapes and sizes. Other aids are lightships, submarine warning stations, wireless telegraphy stations, land telegraph stations, signal stations of several kinds, storm warning stations, meteorological stations and magnetic observatories, time balls, ice-breaking steamers, tide gauges, tide tables, tidal currents reports, coast pilots with sailing directions, notices to mariners and life saving stations. Quarantine stations and marine hospitals are also maintained.

The lighthouses have distinctive characteristics, viz.: fixed lights, revolving lights and flash lights. Two systems are used, dioptric or lense lights and catoptric or reflector lights. Dioptric lights have in most localities been substituted for catoptric lights. The work of substituting dioptric for catoptric lights is being carried on continuously.



Reinforced Concrete Tower With Flying Buttress—Well Known Type of Canadian Lighthouse

Lighthouse Improvements

The subject of lighthouse illumination has, in recent years, received special and most careful attention. The installation of more powerful lights at many of the most important stations along the Atlantic and Pacific coasts, the Gulf and River St. Lawrence, Bay of Fundy and Great Lakes, made it necessary for the department to build more expensive and a better class of towers. The greater weight and size of the new lanterns required more stable structures, where new towers were erected, and the strengthening and raising of old towers. It was imperative to guard against vibration as far as possible, and this led to the more extensive use of masonry and the introduction of concrete reinforced with steel, instead of wooden structures.

Cape Race tower was the first reinforced concrete tower and supports one of the largest lanterns produced by Messrs. Chance Bros. & Co. of Birmingham, England. The light is elevated 165 feet above high water mark, and the lantern is 17 feet 1 1/4 inches in diameter, having an illuminator or mantle 85 millimeters in diameter. It is fitted with the incandescent vapor oil system and has a hyper-radial single flashing apparatus of 1,330 m.m. focal distance, consisting of four panels of 90 degrees horizontal angle. The light is also floated on mercury and operated by clock work mechanism, the flash occurring every five seconds with an interval of darkness. The light should be seen nineteen miles at sea but has been observed at a much greater distance. It is classed amongst the most powerful of lights, the candle power being 1,000,000 candles.

The changes in lights consist of replacing old-fashioned lanterns by new and modern ones, with incandescent mantle burners and vaporized oil as the source of light; other changes are being made by replacing some lights by

others of greater magnitude having the same kind of optical apparatus, but with more distinctive features. Acetylene as an illuminant, from calcium carbide, has been largely introduced in unwatched towers and beacons. It is used entirely in the lighted buoys of Canada.

The following table may form an interesting study for the mariner who is constantly called upon to make comparisons between lights and to note their distinctive character:

Approximate Candle Power of Dioptric Flashing Apparatus Used in Canadian Lighthouses

Order	Character, flashing	Burner used,		Candle power
		m.m. vapor		
Hyper-radial	Single	85		1,000,000
First	Single	85		450,000
"	Double	85		450,000
"	Triple	85		240,000
"	Quadruple	85		160,000
Second	Single	85		270,000
"	Double	85		270,000
"	Triple	85		135,000
"	Quadruple	85		95,000
Third	Single	55		100,000
"	Double	55		100,000
"	Triple	55		55,000
"	Quadruple	55		40,000
"	Single, small	55		60,000
"	Double	55		60,000
"	Triple	55		35,000
"	Quadruple	55		25,000
Fourth	Single	35		25,000
"	Double	35		25,000
"	Triple	35		15,000
"	Quadruple	35		11,000

Catoptric revolving lights have a power of less than 5,000 c.p. By substituting an oil vapor burner for a circular wick burner of same diameter, the power of an apparatus is increased about three and one-half times.

The light stations of the department now number about one thousand, and about twelve hundred separate lights are shown from lighthouses.

Nature of Types of Improved Aids to Navigation

The nature of the improved types of aids to navigation will be interesting to mariners, ship-owners, insurance companies and others concerned in shipping.

Diaphone

The diaphone has proven in Canadian waters to be superior to the siren or explosive fog signals, though very much smaller in size and weight than the Scotch siren. The experience of the Marine Department with compressed air horns, steam whistles and explosive fog alarms was unsatisfactory. The Scotch siren, which had been in use in Great Britain and considered the most effective sounding instrument at one time, was adopted at two of the most important stations on the Atlantic coast and the St. Lawrence river. The compressed air horn gave surprisingly good results in calm weather, but did not force the sound through external noises with any degree of reliability in thick or stormy weather.

In the year 1903 the diaphone was recommended to the department as the best known invention for producing signal warnings and neither cumbersome nor heavy, compared with the siren and its plant.

A trial of a small diaphone of 87 pounds weight alongside of a siren which, with its horn, weighed 9,280 pounds, showed that the diaphone could be heard at a greater distance. The siren operated by 14 1/2 horse power, was heard 5 3/4 miles from the station, the diaphone was heard 6 1/4 miles, but only required 1 1/4 horse power to operate it.

The superiority of the diaphone was shown in every respect, taking up less space and being operated at much less expense. The use of the diaphone has proved that it is less likely to get out of order than other aerial sig-

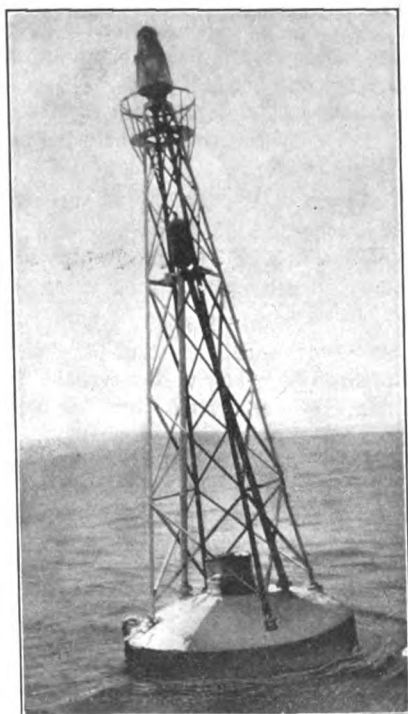
nals, and not so liable to uncertainty of sound, owing to its evenness of pitch.

The diaphone has been developed until it has reached a greater state of efficiency and perfection than when first introduced by the department. Its operations are carefully noted by the departmental officers, and it has been ascertained that the notes are distinguishable from the noises made by the sea on ledges and shoals, and by wind on the sea. The same results were not obtained, in all cases, with the siren and explosives.

Acting upon the discovery of the superiority of the diaphone, the department replaced a large number of other fog signals by the diaphone and is continuing to establish, at other points, this type of warning.

About eighty-two diaphones are now in use in the Dominion of Canada, varying from 1½-inch to 5-inch diaphones, and several more will be put in operation before the end of the season of navigation of 1912, which will make the total number established and to be operated in the near future, about ninety. The stations are located in the main waterways of Canada. The other fog alarms of the Dominion consist of a small number of sirens and a number of fog horns, operated by steam.

The difficulties attending navigation in the Bay of Fundy on account of frequent fogs, have been largely overcome by the aid of the diaphone. The establishment of fog alarms or warnings are indispensable; vessels are never out of range of sound of these instruments, from the entrance of the bay until the harbor of St. John is reached.

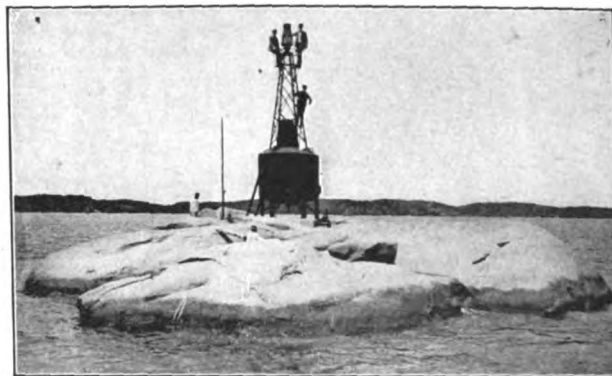


Gas and Whistling Buoy

#### Combined Lighted and Warning Buoys—Acetylene Buoys

In addition to improving the fog and thick weather warnings established on land, low pressure acetylene buoys, combination acetylene light and whistling buoys and combination acetylene lighted and bell buoys have introduced. These buoys are known as the Willson buoys and are manufactured by the International Marine Signal Company, Ltd., of Ottawa.

The whistling device of the combination buoy is an improvement on the old type on account of the increased area of the compression tube, the increase being from



Beacon—British Columbia

4½ square feet in the Courtenay whistling buoy to 7 feet and 25 feet in the combination gas and whistling buoy. This combination buoy is equipped for receiving the standard automatic submarine bell apparatus, which conducts the sound of the bell by water to vessels equipped with receivers.

Acetylene from calcium carbide is used in these buoys. The largest size lanterns made for gas buoys show a light of from 825 to 1,063 candle power, and with the sound-ing power so great that the combined buoys constitute a floating aid to navigation comparable to a lightship. The greater efficiency of these buoys has only been arrived at by careful observation of the defects of the automatic buoys formerly in use, and step by step have the improvements been thought out and adopted. It was not until the superiority of the acetylene buoy as now constructed, with low pressure gas, generated directly from calcium carbide in the buoy, was beyond dispute, that the combined buoys were adopted and, as they mark dangers by being placed outside the danger itself instead of being located on shore, they are indisputably a very valuable aid in navigating Canadian waters. Thirty-eight of the combined automatic buoys have been placed to mark the dangers along the coast of Nova Scotia from the eastern part of Cape Breton, and continued to St. John, N. B., in the Bay of Fundy. Several of this class of buoy have been placed in the Gulf and lower St. Lawrence river and upper St. Lawrence and Great Lakes, whilst a number have been located where most needed in British Columbia, making a total of sixty-two. Some of these buoys placed in the maritime provinces have the lantern thirty feet from the water and therefore the light can be seen at a great distance.

The largest size combined buoy is 14 feet 6¾ inches maximum diameter; weight, 38,000 pounds when fully charged; draft, 26 feet 8 inches; total area of whistle tubes, 25 square feet; size of whistle, 18 inches; height of focal plane, 29 feet 7 inches; lantern, 500 m.m.; candle power, 1,063. The light can be seen under favorable circumstances twenty miles. With the occulting light, a full charge, say 3,500 pounds of carbide, should show a continuous light for nine months. The smaller combined gas and whistling buoy measures 9 feet 6¾ inches in diameter, with the parts correspondingly smaller excepting the gas generator, which is large enough to contain 3,500 pounds of carbide.

As the subject here dealt with is the improved types of aids to navigation adopted by the department as distinct from the old types, it is pertinent to briefly and simply describe the construction and operation of the acetylene buoy. The buoys are of two shapes, one elliptical and the other cylindrical, with the top of the body of the buoy forming a segment of a sphere. The gas generator is a tube of steel, placed vertically in the center of the



buoy and extending several feet below the body of the buoy, with a counterweight attached for the purpose of keeping the buoy upright. A grate is placed about one-third of the distance up from the counterweight, in the steel tube, and the calcium carbide crystals, size 4 by 8 inches, are put in at the top of the tube and rest upon the grate. The gas is generated by the water from beneath, entering a hole in the counterweight and ascending to the grate in the tube. The gas when generated ascends through the carbide crystals to the purifier and from there to the lantern, by a small pipe. The light is shown by a cluster of flat flames with a round pilot flame to each flat flame, all surrounded by a Fresnel lens, giving to the lantern the property of throwing the light to a great distance. The lantern is supported by frame work of structural steel resting upon the body of the buoy. When gas is produced faster than the lantern consumes it, the pressure of gas being greater than water, forces the water away from the carbide and a temporary suspension of generation occurs during the time the gas is being consumed. The generation is resumed when the pressure of gas below stops and thus the automatic operation proceeds as long as the carbide lasts.

The ordinary Wilson acetylene buoys are now made of three sizes: No. 7½ B, 8 feet 6 inches diameter; carbide charge, 1,300; height of focal plane, 9 feet 10 inches; lantern, 200 m.m.; candle power, 140, through a lens. With occulting light the charge is supposed to last six months. The other sizes are No. 8½ B and No. 9½ B, with a somewhat larger diameter respectively than No. 7½ B and showing more powerful lights. The charge of carbide for No. 9½ B weighs 3,500 pounds and is supposed to last nine months with occulting burners. The department has in use smaller sized gas buoys and intermediate sizes, but the above sizes are standard. About 200 of the ordinary acetylene buoys have been placed on the coast, Great Lakes and in rivers.

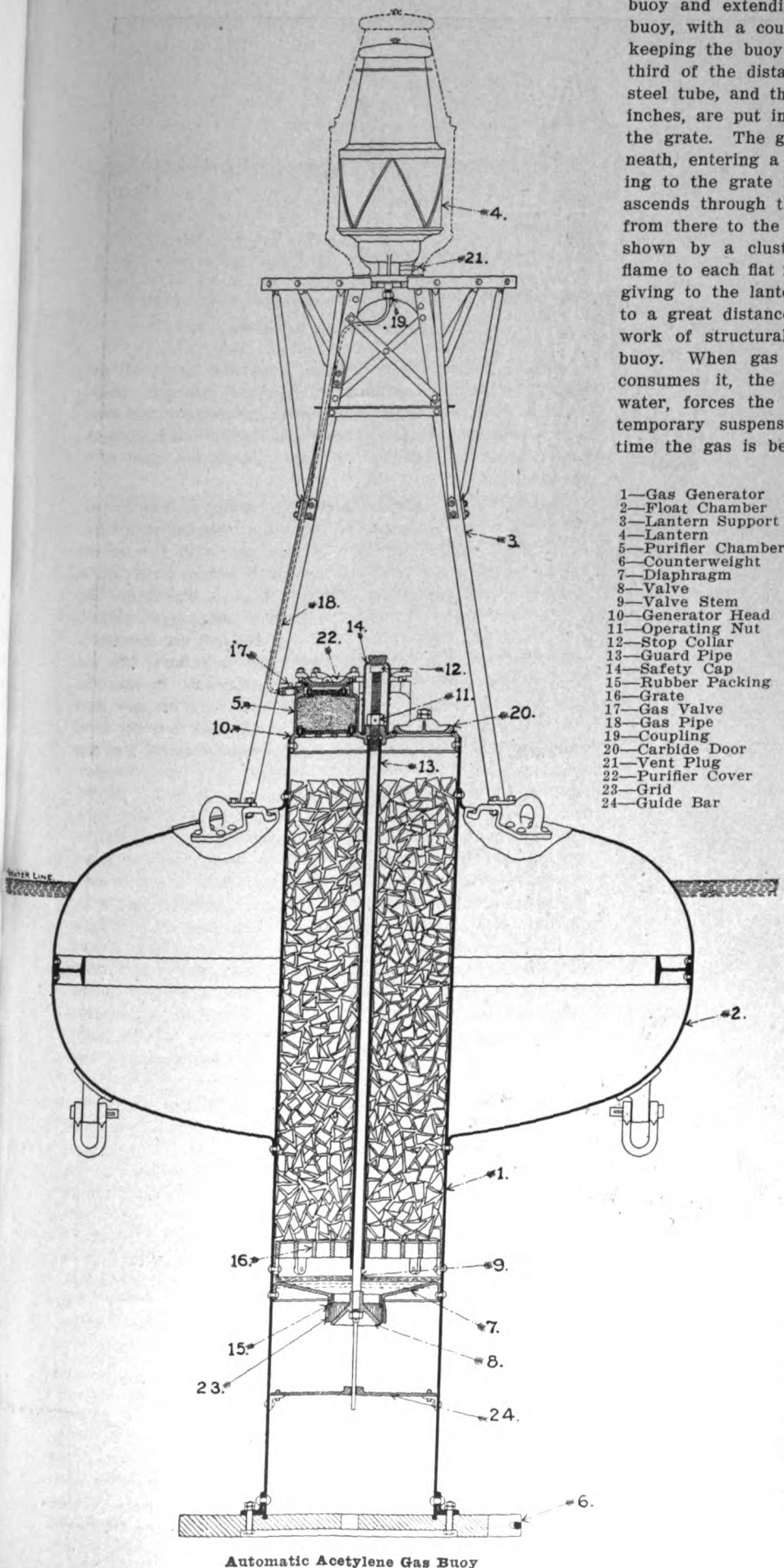
#### Light Stations, Lights, Lightships, Fog Alarms and Gas Buoys,

##### Combined Gas and Warning Buoys

We eliminate the mention of aids to navigation on the Atlantic shores and confine ourselves to the Great Lakes, Manitoba and British Columbia.—Ed. Note.

On the Great Lakes there are 225 light stations showing 311 lights, 32 fog alarm stations, 1 lightship on Lake Erie, 78 gas buoys, 1 combined gas and whistling buoy and 1 combined gas and bell. The districts for the gas buoy service is divided into Prescott, Lake Ontario, Lake Erie, Georgian Bay, Sault Ste. Marie and Port Arthur districts.

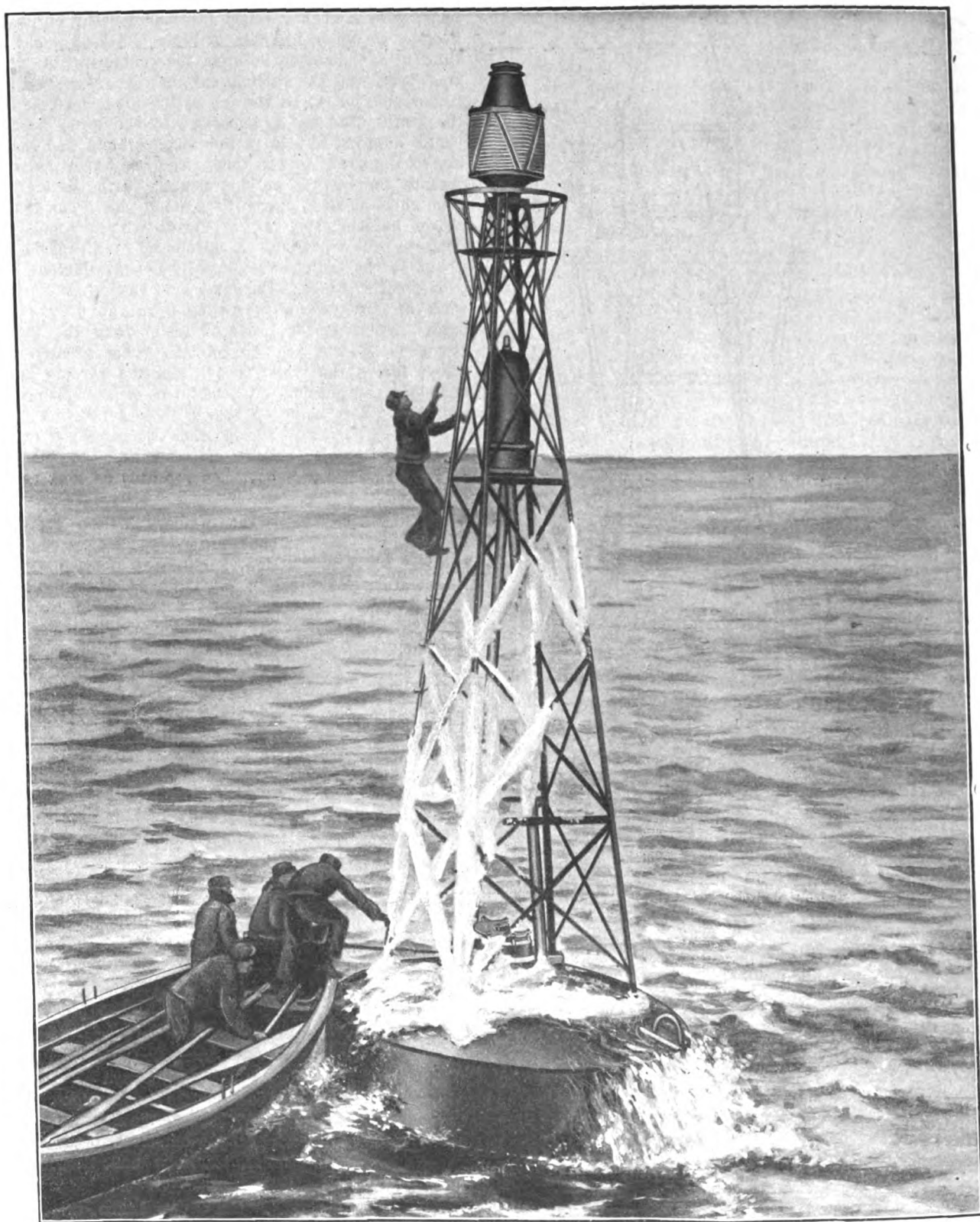
Manitoba and British Columbia  
Manitoba has 6 light stations,



Automatic Acetylene Gas Buoy

- 1—Gas Generator
- 2—Float Chamber
- 3—Lantern Support
- 4—Lantern
- 5—Purifier Chamber
- 6—Counterweight
- 7—Diaphragm
- 8—Valve
- 9—Valve Stem
- 10—Generator Head
- 11—Operating Nut
- 12—Stop Collar
- 13—Guard Pipe
- 14—Safety Cap
- 15—Rubber Packing
- 16—Grate
- 17—Gas Valve
- 18—Gas Pipe
- 19—Coupling
- 20—Carbide Door
- 21—Vent Plug
- 22—Purifier Cover
- 23—Grid
- 24—Guide Bar





**Gas and Whistling Buoy—Known in Marine Circles as the "Outer Automatic"**

showing 11 lights. The British Columbia waters, Pacific coast, are all included in one district, with headquarters at Victoria; the new section, with headquarters at Prince Rupert, includes the northern waters of British Columbia. British Columbia has 60 light stations, showing 101 lights, 26 fog alarm stations, lightships, 2 combined gas and whistling, 2 combined gas and bell buoys and 18 gas buoys, besides numerous steel and wooden buoys. Acetylene gas beacons unwatched have been placed in waters around

isolated localities. These are charged by the supply steamers with calcium carbide at intervals.

#### **Life Saving Service**

British Columbia .....	5
Ontario (Great Lakes) .....	11

Hydrographic surveys, tidal surveys, wireless telegraphy and fishery protection service are under the naval service of Canada.

## NAVIGATORS OF U. S. A. T. "SHERIDAN" COMMENDED

When ships meet with disasters, caused by faulty navigation or with disasters solely due to perils and mysteries of nature and beyond the control of human foresight and ability, we are confronted with continuous discussions of such catastrophes, which eventually disfavorably or favorably result and pass on to maritime history of the nations thus concerned.

The method of treatment, however, when voyages are performed successfully and at times under most trying conditions contrary to that which the general tenor of the case would seem to require is often disappointing and mention is rarely made of those deserving at least acknowledgment and praise for work well done.

The latter refers in this particular instance to those in command of the U. S. A. T. "Sheridan," a government vessel, navigated by men of the merchant marine, which steamer recently returned to San Francisco, after a voyage from the latter port, via Tacoma, Seattle, Fort Seward (Haines, Alaska), Fort Lisicum (Valdez, Alaska), Fort Davis (Nome, Alaska) and return via Dutch Harbor and Tacoma to San Francisco.

Outward bound the passenger list consisted of Major General Murray, inspector general of the Pacific Coast, with staff of Major Gilmore, U. S. Artillery Corps, and Lieutenant H. C. Pratt, U. S. First Cavalry, A. D. C., all of whom left the ship in St. Michaels on a tour of inspection to the respective United States army posts of Alaska, and the 30th U. S. Infantry, which exchanged with the 16th U. S. Infantry, the latter of whom were the passengers on the homeward bound voyage.

The Pacific Marine Review records with keen satisfaction the following correspondence and deserving cable message of commendation, which is self explanatory:

"War Department. Official Telegram. U. S. A. T. 'Sheridan,' Nome, June 27, 1912.

"I certify that the following telegram is on official business, and necessary for the public service.

"(Signed) H. C. Pratt,

"First Lieut., Cavalry, A. D. C.

"Adjutant General, Washington, D. C.

"'Sheridan' just arrived safely after seven perilous days amid ice and fog of Bering sea. Highest praise and commendation due to navigators, Captain Healey and Pilot Captain Croskey, for the great care and wonderful skill shown by them in bringing the ship safely through the ice. Ice still in sea and I strongly recommend that 'Sheridan' be authorized delay at St. Michael until navigators believe possibility of danger from ice on return trip has passed.

"(Signed) Murray,  
"Major General."

"U. S. A. T. 'Sheridan.' Off Ft. St. Michaels, Alaska, July 2, 1912.

"Copy respectfully furnished Captain Alfred Croskey, Pilot U. S. A. T. 'Sheridan.'

"(Signed) H. S. Howland,

"Captain, 16th Infantry, Transport Quartermaster.

"My Dear Captain Croskey:

"I feel much indebted to you for the able assistance rendered that made it possible for us to merit the above commendation. Yours respectfully,

"(Signed) J. M. Healey,

"Master, U. S. A. T. 'Sheridan.'"

In the protection of shipping and its allied interests, the just pursuance of which this publication has always striven for, it is with no small gratification that we record the praiseworthy cable message of the inspector general of the Pacific Coast, Major General Murray, on behalf of the two deserving navigators of the U. S. A. T. "Sheridan."

The U. S. A. T. "Sheridan" is a twin screw steamer of

5,673 gross tons, 445.5 feet in length, 49.2 beam and 30 hold depth, drawing approximately 27 feet loaded, and is next to the U. S. A. T. "Dix" and "Sherman," the third largest of the U. S. transport fleet. An unusual big vessel for voyages in difficult waters, with insufficient aids to navigation in such, and adjacent to Fort Seward and Fort Lisicum in particular. The voyage was most successfully completed during a season of the year when large amounts of ice abound plentifully in the Bering sea.

On June 22, in lat. 61.30 N. and long. 168.16 W., the first icebergs were sighted, and on June 23, in lat. 61.50 N. and long. 167.20 W., ice was found closely packed as far as the eye could reach. On June 24, in lat. 62.30 N. and long. 170.24 W. (note the slow progress of the vessel), some open water was found east of Nunivak island, but further to the eastward solid ice, partly consisting of the easily distinguishable Yukon flat ice, in contrast to the heavy Arctic ice, of which some pieces are reported as large as ten acre lots of clear blue ice. The vessel finally reached the northern end of St. Lawrence island, where no opening could be found until after three days, when, on June 27, in lat. 64.15 N. and long. 166.08 W., only 15 miles southwest of Nome City, again clear water was reached. After completing her mission in the Norton Sound ports, the U. S. A. T. "Sheridan" called at Dutch Harbor for coal and water, sailing from there via Tacoma, where 3,000 tons of coal was taken on, for San Francisco for further orders from the department.

E. F.

The Ballin Watertube Boiler Company, of Portland, Ore., reports the following installation of their boilers:

"We furnished two Ballin watertube boilers of 2,500 square feet of heating surface each for the steamer 'Sol Duc,' which recently passed her successful trials, and is now in service. We have practically completed two boilers of 3,500 square feet heating surface each for the new Portland fireboat, and have under construction two boilers of 5,600 square feet heating surface each for the new steamer 'Tacoma;' one of 2,000 for the steam schooner 'Rochelle' (formerly 'Minnie E. Kelton') and two boilers of 3,300 square feet heating surface each for the U. S. sea-going dredge 'P. S. Michie.'"

### TRADE WITH SOUTH AMERICA

The desirability of more trading between the United States and the countries of South America is acknowledged in all commercial circles. Every consul and traveler acquainted with the ports of South America knows of the vast trading field there for vessels from the United States. After proper American agencies have been established in the southern republics the important question is water transportation.

Shall the additional commerce that is to be had in South America, much of which is to pass through the Panama Canal, be handled exclusively by other nations, or shall the United States obtain its proper share of the same? The new commerce to the south of us is of little use to the United States if it is to be controlled by other countries.

There must be American built, American owned and American manned vessels to handle this new business. What are the moneyed men of our country going to do about it? Will they build and equip the ships needed? If we do not, the commerce which is sure to grow will continue to go to foreigners. We can obtain it, however, on the seas just as we did in the early part of the 19th century. To get it, there must be American ships. We should not look to other nations to help us expand commercially.

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## ON REFLECTING

**B**EFITTING the nation which owns a little more than half of the ocean going tonnage of the world, the president of the British Board of Trade has appointed a technical committee to advise him in the interests of safety of life at sea, with special reference to the internal sub-division of vessels of all classes by watertight bulkheads and hull construction in general. This committee is comprised of some of the most important world wide known naval architects, engineers and chief surveyors of the British shipping corporations, which committee unquestionably will in due time make sane and sound recommendations, some of which may after conscientious weighing by the Board of Trade be adopted in the near future. The chairman of the committee is naturally not a layman, but on the contrary a naval architect of fame and repute, Mr. Archibald Denny, of Wm. Denny Bros., Dumbarton. Other well known members are:

James Bain, late superintendent engineer of the Cunard Line, engineer.

H. R. Champness, assistant director of naval construction, admiralty.

G. B. Hunter, of Swan, Hunter & Wigham Richardson, Ltd., Wallsend-on-Tyne, naval architect.

Summers Hunter, of the Northeastern Marine Engineering Company, Ltd., Wallsend-on-Tyne, engineer.

J. Foster King, chief surveyor of the British Corporation for the Survey and Registry of Shipping.

Andrew Laing, of the Wallsend Slipway & Engineering Company, Wallsend-on-Tyne, engineer.

W. H. Luke, of John Brown & Co., Ltd., Clydebank, naval architect.

S. J. P. Thearle, D.Sc., chief ship surveyor of Lloyds Register of British and Foreign Shipping.

J. J. Welch, professor of naval architecture, Armstrong College, Newcastle-on-Tyne.

Such highly commendable, prompt and sane action taken by the president of the Board of Trade, the chastising of which the honorable senator of Michigan has kindly consented to leave to the sound judgment of Great Britain, the mistress of the seas, is fully appreciated by Germany, the second maritime nation of the world, which shortly after the "Titanic" disaster took the initiative step for an international conference, which will be held in London during the coming autumn. Germany has naturally now waved her claims for such a conference, but this nation's proposals will be duly presented, in addition to those

of this efficient committee through the Board of Trade of Great Britain.

I am now inclined to believe that our own kindergarten tactics, resulting in topsy-turvy and too hastily made regulations for safety at sea, including transportation on inland waters, will stand for naught, as they are likely to result in due time to further farcical amendments, added with accustomed regularity and constant change.

The safer ship and the ship less apt to founder during disaster is largely looming on the world's horizon and will be with us in the very near future, and then the encumbrance of piling life boats on such vessels must as a logical conclusion vanish to a considerable extent.

I feel further assured that to meet all situations, plans will be put forward commending themselves to the attention of every maritime nation and submitted by men who possess not only ample experience, but profound practical technical and judicial knowledge of spheres which do not belong to the everyday layman.

The rivalry of the great Trans-Atlantic and other ocean steamship companies, in possession of fleets of the latest and so far safest wonders of naval architecture, will leave nothing undone to not only attain the highest mark of efficiency and safety in ocean travel, but will rival to excel each other in this achievement and maintenance of such. While a partial reconstruction of existing modern liners may cause a tremendous outlay of capital, it is nevertheless not unlikely to occur, in view of the pending recommendation of such experts.

Accidents heretofore experienced will naturally minimize and so will insurance rates on our ocean highways and the flurry of the present large capacity of compulsory boatage, which would under unfavorable weather conditions, as repeatedly proven, stand for naught.

The Honorable Senator of Michigan has introduced in the Senate a Joint Resolution to provide for the creation of a commission to investigate the laws and regulations for the construction and equipment in the navigation of vessels, which, in the writer's opinion, is inferior to the Bill S .7038, introduced in the Senate by the Honorable Knute Nelson of Minnesota. However, both bills will prove their lack as compared with the assured efficiency of the committee above mentioned.

With all due respect to the many excellent members of the Senate and House Committees on Maritime affairs, I much miss in legislation for marine matters the able Senators from some of our Eastern States, who have since gone to the Great Beyond, but who lived, worked and were trained in a period during which the United States of America was a maritime power.

The creation of a department of experts in the Government employ is still wanting, experts upon whose experience, word and skill the United States Government could absolutely rely, to make fair and just recommendations, protecting the traveling public as well as the maligned shipowner and those who go to sea in charge of ships.

Senator Smith's Joint Resolution will not help the American Merchant Marine. In an interview with the Washington correspondent of Leslie's Weekly and published on July 4th, under the heading of "How Shall We Further Safeguard Ocean Travel," Senator W. A. Smith said: "There is great hope of regulating ocean navigation in the same way as we control railroad transportation." The absurdity of this utterance reminds me of the remark of an over-enthusiastic steamship manager, who in the course of my conversation with him, declared that "His company's business was railroading on steamships." If the gentleman in question had added that his company's business was "The delusion of railroading on steamships," it would have hit the bull's-eye. However,

my friend's enthusiasm has since cooled to refrigerator temperature.

I would advise the Honorable W. A. Smith to abstain from recommending the regulation of ocean navigation on railroad principles, for in the latter's regulation, as he terms it, "under Government control," we have, and regrettably so, nothing to boast. In the record year 1903, we killed and injured alone on our railroads in the United States, 90,000 people, the highest percentage of any country in the world, notwithstanding the fact that Great Britain carried more passengers on its railroads than the United States, and the former under decidedly more congested conditions, making traffic more difficult and liable to accident. No one year in the maritime history of nations can and ever will show any way near such appalling a figure of sacrifice in human lives. Is it at all possible that one would propose for the prevention of such a horrifying death roll on railroads "aviation life belts"? Just as ridiculous an appliance as the carrying of buoys on shipboard to mark the burial ground of ocean steamers in case of disaster to be anchored in water two miles deep; yes, and six miles deep (a depth which only recently was discovered in the South Pacific ocean), which was most gloriously and earnestly recommended for ocean navigation of the future.

Let me, however, add, to the credit of railroad management which issues the most rigid system of rules and regulations, the laxity of enforcing these stringent and efficient laws lays in the lack of discipline among their men holding subordinate positions, as members of dominating railroad labor organizations, against which our railroad management is almost helpless, constantly fearing to cause strikes so paralyzing to essential traffic.

Railroad management, domination of railroad labor and government control is a sad combination! Management of steamships, on board of which the commander is the representative of the owner, just as much as the captain of a naval vessel represents his country in foreign waters, the master is supreme on board of his ship and essentially so, which condition typifies an entirely different aspect.

Thanks to the excellent school of self reliance from the very boyhood upward, which has brought forth pride and high-mindedness of spirit in men of the sea-faring profession, we are freed of such paralyzing restrictions on the sea. Officers and engineers on board of the world's great liners are gentlemen in their life's calling and under foreign flags consist mostly of officers of the naval reserve, in whom the admirable discipline of their respective countries' navy is deeply injected. An order from their superiors demands, and is cheerfully complied with, instant obedience in the every day routine life on board, as well as under most trying circumstances, so splendidly and repeatedly proven. It is this fundamental principle "discipline on shipboard" which has blossomed into flowers of the brightest hue "chivalry" and "sea-heroism," thus glorifying tradition.

In relation to threatening strikes, caused by sailors and firemen, cooks and stewards' unions, which the Wilson Bill so fatherly tries to protect, let us look up in admiration to France, which nation only recently so forcibly protected the sailing on schedule time of one of her subsidized mail steamers, by substituting naval men for the regular ship's crew, which had made unreasonable demands at the time of the vessel's sailing. The ship proceeded with all preciseness and left its lawless crew behind. What a victory for a just management and for a just nation protecting its shipping interests.

The owner, the shipbuilder, the underwriter, the mariner, the seafarer, and those whose business or pleasure necessitates the frequent sojourn on the high seas are all only too ready and anxious to strive to make safety in ocean travel more perfect, but it must be done on sane and sen-

sible lines and with due protection of the legal and moral rights of all concerned. In reference to the legal and moral rights of all concerned, we have failed and utterly failed again. After the Slocum disaster, a steamer of the Lake, Bay and Sound class, we more stringently enforced the life-saving equipment on our few existing ocean steamers, and after an ocean disaster of the "Titanic's" magnitude, we practically enforce ocean laws on Lake, Bay and Sound steamers, without giving a single thought to the ever-increasing number and size of vessels propelled by gas and gasoline engines—the motor boat.

This sufficiently proves the lack of foresight of those proposing new rules and regulations, as well as those who shape them, and in particular those who approve these rules.

As often before, we are again confronted with pages of amendments of steamboat inspection rules and regulations, through which we strike an uncalled for blow at the transportation business of inland navigation on the Pacific Coast and which rules, I predict, will in a short time be again amended. Truly, such rules are not only a persecution of shipowners but are made to the detriment of the traveling public, which our lordly lawmakers, sitting in the Halls of Wisdom of the Mighty, intended to protect, but in the protection of which they have made a mess. Would not any sane man, woman or child accustomed to water transportation much prefer to travel on these waters on a Sound steamer well equipped with life-saving appliances in case of emergency than on a motor boat of low freeboard, in charge of men without the qualifications obtained through state examination, with nothing but a number of life belts on board?

Heading a correspondence under the title, "Rules of Board of Supervising Inspectors of Steam Vessels Cause Resentment," I have partially made my comments in the Pacific Marine Review's July issue relative to these Amendments of Steamboat Inspection Rules and Regulations, dated June 29th, 1912, consisting of seven pages. It is in my mind the worst piece of thoughtlessness which has of late come to my notice. These rules are in particular detrimental to owners' interests and if not changed in due time might seriously tie up water transportation affecting thousands of people and a trade of which this section of the country has all reason to be proud, created as it were under indeed most humble and trying circumstances. The perspicacity and consistency of our pioneer steamship men has only of late been crowned with success. This applies to all navigation interests in the finest body of deep water in the United States, land locked, sheltered, and from a climatic point of view, unequalled in any part of the world—the Puget Sound and adjacent waters of the State of Washington.

A letter addressed to the Tacoma Commercial Club and the Chamber of Commerce, signed by Benj. J. Cable, Acting Secretary of the Department of Commerce and Labor, stated that "the new rule in regard to lifeboat equipment was formulated after due consideration by the Department, but in order that no injustice or hardship may be worked to the interests of vessels navigating Puget Sound, you are advised that it is the intention of the supervising inspector general of the steamboat inspection service, this department, to visit your vicinity some time before Sept. 1, 1912, in order that he may personally examine the conditions as they actually exist and submit a report to the department relative thereto."

Such inexcusable correspondence only flames the fire of injustice, emanating indignation and the question: "Why were the conditions in this part of the country not previously examined and duly considered before the issue of the new rules"? Is this "due consideration"?

Does it not strikingly appear that chastisement would



also here apply, to rejuvenate over-ripe administrative boards in the pruning of dead branches and less sterile perception by new sages in possession of true sagacity more applicable to time and conditions?

The January issue of the Pacific Marine Review contained an editorial on the "United States Hydrostatic Test and Boiler Construction Compared With Other Nations," which article created considerable interest throughout the United States and Canada, and in which I elucidated the inefficiency of our regulations in having no hard and fast rules.

"First: In regards to the quality of material used in riveting; second, the absence of rules governing strength of riveting joints; third, the preference of a much lower factor of safety than that required by foreign authorities; and fourth, last, but not least, the contentment with a much lower hydrostatic test pressure, but preferring to apply this test every year, immaterial whether the boiler is sound or not, an annoyance causing unnecessary delay, loss of time and periodical extravagance at the expense of our indeed burdened shipowners. The comparison of the tensile test for stays and material for stays should count as inadequacies numbers five and six respectively."

The new rules issued June 29th, 1912, bring forth in a measure number five and six respectively as above mentioned, but the just as important, and in the writer's opinion, more essential suggestions are not heeded by the Board, although I was informed the Board was interested in it. Is it possible that if my suggestions had been more fully adopted it could have been considered too much of a material benefit to our shipowners or too complete a victory to its advocate, the Pacific Marine Review? The new rules follow herewith:

#### Rule II—Boilers and Attachments

Section 17. (Second paragraph on page 39, Rules and Regulations, edition of April 27, 1912, amended.)

All steel bars to be used as stays or braces in marine boilers and allowed a stress of 7,000, 8,000 or 9,000 pounds per square inch of section, tested by the United States assistant inspectors at the mills where the material is manufactured, shall be tested in the following manner: There shall be taken from each heat two pieces for tensile tests and two pieces for bending tests. The full size bars within the capacity of the testing machine may be used for tensile tests. Where the full size of the bar is too large for the capacity of the testing machine, the bar may be reduced in size to meet such capacity. To facilitate and insure accurate tests all test bars may be reduced in size. The minimum tensile strength of each test piece shall not be less than 60,000 pounds per square inch of section and each test piece that has been reduced in size must show an elongation of at least [30] 28 per cent in 2 inches. Where the full size of the bar has been used for testing, the test piece must show an elongation of at least 25 per cent in 8 inches. When the tensile strength of the test piece is more than 66,000 pounds per square inch of section, each test piece that has been reduced in size must show an elongation of at least 26 per cent in 2 inches. Where the full size of the bar has been used for testing, each test piece must show an elongation of at least 22 per cent in 8 inches. The pieces for the bend test shall in all cases be the full size of the bar and must be bent cold to a curve, the inner radius of which is equal to one and one-half times the diameter of the bar, without flaws or cracks. Should any such test bar fail in either the tensile or bending test, no bars from such heat shall be allowed to be used in the construction of any marine boiler. Where a heat of steel bars has been passed by an inspector, separate lots of bars from such heat may be furnished to different boiler manufacturers upon a certificate from the mill that the bars were made from such accepted heat.

For those who pretend to legislate for a sphere in which unfortunately so many truly appear kindergarten pupils, including some advisers officially employed by the Government, who have obtained their present positions by direct political pull in place of just merit, I suggest a large reduction of pretense, with more realistic display and de-

votion to actual accomplishment in spheres where they may do real good and in which direction they perhaps possess more ability than they do in marine matters. The Daily Dispatch of London, recently published the following, with a cartoon, with apparent attempt to instruct those who require enlightenment on maritime affairs, which lesson is, in the writer's opinion, exceedingly clever:

"No, the windlass is not kept for winding up the dog watch.

"No, it would not be possible to construct a raft out of the ship's log.

"No, ocean currents do not grow on seaweed.

"No, the banks of Newfoundland do not close on Saturday afternoon.

"No, the tonnage of a ship is not found by weighing the anchor."

What a cutting jest!

E. F.

#### Progress in Motor Ship Construction

A considerable number of motor ships are now being constructed in German yards. It will be remembered that the Hamburg-American Line recently purchased the Danish motor ship 'Flonia'—now renamed Christian X. Messrs. Blohm & Voss, of Hamburg, are building one motor ship for the Woermann Line and one for the Hamburg-American Line; the Weser Shipbuilding Co. is building and has launched one ship for the Hamburg-American Line; the Reiherstieg yards at Hamburg are building a ship for the German-American Petroleum Co.; the Germania yards at Kiel are building three ships for the German-American Petroleum Co.; the Howaldt yards at Kiel are building two ships—one of which will be delivered next month—for the Hamburg-South American Steamship Co.; and the Tecklenburg yards at Geestemünde are building a ship for the Hansa Line.

(I refer to my remarks made relative to navigation of motor boats carrying passengers without the existence of necessary rules governing this class of vessels which are not steamships.)—Ed. Note.

#### TITANIC DISASTER—BRITISH REPORT A MISERABLE DISAPPOINTMENT

By H. B. Jayne

As I anticipated, Lord Mersey's report is, at least in my judgment, a great disappointment and, much as Senator Smith's committee has been abused, it is not, in my opinion, nearly as forceful or even as practical. Although fortified by the presence of skilled assessors, including a very high degree of technical skill in the various details immediately concerned, Lord Mersey, at best an admiralty judge of experience, arrogated to himself the entire conduct of the investigation; in fact, at its inception, rudely remarked that he could conduct the investigation without assistance.

In consequence, beyond a few general and obvious deductions, such as excessive speed, lack of proper caution, which an apprentice boy could have discovered, and which Senator Smith's committee had long before recorded, and condemnation of Captain Lord of the "California" for failing to proceed to the assistance of the "Titanic," probably justified, but notably in contradistinction to that contemptible abasement to rank and title which is still a fetish in Great Britain, which blindly denies that a member of the peerage can do any wrong, reflected in the exoneration of Sir and Lady Cosmo Duff Gordon, notwithstanding their contemptible testimony, aside from these general and most obvious deductions, the report contains nothing of a useful character. Nothing to suggest at what height boats can best be carried, both for landing and yet sufficiently high and protected from wave strokes; nothing to suggest whether a reduction of excessive accommodations, in other words, cubical space, for first class passengers, could be reduced with consequent reduc-

tions in superstructure and whether at the same time a fairer proportion of cubical space could be assigned to third class passengers, the foundation of a steamer's revenue, giving them at once a fairer proportion of accommodation and fairer chances for escape in disaster. Nothing to suggest what actual courses might be set according to season. Nothing as practical, because the skilled assessors, the constructors, the engineering talent, the navigating talent, appointed to advise the president of the commission, in short to cover such a man's inevitable ignorance of technical and practical matters, must sit silent, while the president and a concourse of equally conceited and technically ignorant counsel must badger the few surviving ship's officers and surviving passengers, who had been through such horrible experiences, with such silly and utterly immaterial questions as "Did you hear screams?" "How long did you hear those screams?" and other questions practically the equivalent of asking men in such emergencies whether on hearing that the ship had struck an iceberg they proceeded like Policeman X on information received, making due notes and records.

Although a certain ignorant, prejudiced and sycophantic section of the British press may hail this report as a "masterpiece" (as I have read) and bow the knee to Lord Mersey, I do not hesitate to state that practical men, competent men, unprejudiced men, throughout the world, must agree that the "Mersey mountain has labored and brought forth a miserable Mersey mouse," and I invite our London exchanges and the number of shipping and marine insurance offices we enter in London and Liverpool to take issue with me, and also Lord Mersey himself. In the Washington investigation, although certain technical advisers of skill—equal to any skill in the world—were present, in fact had prepared sensible and proper questions, which the chairman saw fit to suppress in favor of his own silly questions, they were not officially attached to the committee and could only sit in silence and painful humiliation; in fact several left the room when the limit of patience was reached, but in the case of the much heralded British inquiry in London, skilled assessors were officially attached, but the same arrogance and conceit of the president, as at Washington, made their presence practically valueless.

From the technical committee appointed to study watertight divisions, etc., we shall probably get something useful, but beyond harrowing a few survivors and recording a few facts almost as obvious as the sailing date and date of the disaster, neither the Washington nor the London investigation has accomplished anything.

#### THE INTERNATIONAL CONGRESS OF CHAMBERS OF COMMERCE

An ambitious program is outlined for the fifth International Congress of Chambers of Commerce to be held in Boston, Mass., late in September. With President Taft heading an honorary committee of government officials, foreign diplomats and Massachusetts notables, much good for the entire nation may come from discussion of the eight topics suggested for the program of the congress. The world's commerce, with which the delegates have the closest concern, depends upon the world's peace. This was in the minds of the planners when they selected as their first topic the establishment of a permanent international court of arbitration. Unification of legislation, international postal reforms, an international maritime union, agreements between banks of issue, determination of the status of ships and cargoes in time of war and other subjects for consideration, all have close bearings upon the prosperity that attends friendly intercourse of the brotherhood of nations.

The intrinsic value of such a congress—this year for the

first time held out of Europe—to the commercial interests of this nation is almost impossible to speak save in superlatives. It is to be hoped that the importance of the coming event is fully appreciated by all business men. It should be borne in mind that this congress is in no sense a mere pleasure meeting. It is first and foremost a dignified gathering of important business men, carefully selected by the commercial interests of various nations of the world, to discuss topics of vital moment to commerce and industry.

There have been four of these biennial congresses, the first at Liege, Belgium, the second at Milan, Italy, the third at Prague, Austria, and the fourth at London, England. The keynote of these gatherings has been that the business men of the nations, welded together, should impress upon the world the dignity and the power of commerce and the determination of business men that trade, national and international, be purified the world around. Are these not objects of which to be proud? Boston, the metropolis of New England, has all reason to be gratified for being selected as the scene of a gathering of men inspired by such purposes.

The power for constructive development of such gatherings can scarcely be over estimated. The Pacific Marine Review extends its congratulations to the city of Boston as the first city on the western continent to be the meeting place of an International Congress of Chambers of Commerce.

#### STRIDES MADE BY MERCHANT SERVICE GUILD OF BRITISH COLUMBIA.

The subjoined copy of a letter which the Guild has addressed to the Minister of Justice, Ottawa, relates to the appointment of Nautical Assessors, sitting in courts of enquiry into local shipping casualties and is of considerable interest to this publication.

Victoria, B. C., Aug. 8, 1912.

The Honorable the Minister of Justice,  
Ottawa.

Sir:—On behalf of the Merchant Service Guild of British Columbia, an organization representing the captains and officers serving in the coasting and foreign trade of this province, I am writing to place before your notice the matter of the appointment of Nautical Assessors sitting upon courts of enquiry into shipping casualties occurring in British Columbia waters.

The Guild feels that the composition of these courts has recently been of a very unsatisfactory nature and that this should be remedied without further delay, because there is a strong liability that incompetent decisions may be given resulting in grave injustices being inflicted upon those captains and officers whose certificates and professional status are involved.

The assessors sitting upon recent cases have mostly been persons whose practical experience and knowledge of the waters in which the casualties occurred, has been insufficient to justify their appointment, and the Guild would therefore respectfully suggest that future assessors should be persons who are, by personal experience in command of local vessels, thoroughly conversant with the navigation of that particular place where the accident occurs.

The Guild considers that if greater discretion were exercised in the appointment of these officials, along the lines suggested, the local profession would receive fairer treatment and a sounder judgment would be obtained.

Trusting you will kindly assist the Guild in this matter by giving it your early consideration and attention,  
I am, sir,

Your obedient servant,

(Signed) H. G. JARVIS,  
Secretary.

## SHIPPING AND GENERAL FINANCE

PACIFIC MAIL STEAMSHIP CO.—REPORT OF THE  
BOARD OF DIRECTORS

New York, June 20, 1912.

To the Stockholders of the Pacific Mail Steamship Co.:

The president and directors submit herewith their report of the company's operations for the year ended April 30th, 1912, and also the statements showing its financial condition and property at the close of the year.

## Income for the Year

The receipts and disbursements were as follows:

	Receipts.	April 30, 1912	April 30, 1911
Gross receipts from operation of steamers	\$5,123,247.79	\$4,734,199.53	
Steamers chartered	45,600.00	38,220.00	
Central American governments for the transportation of mails	15,180.00	15,180.00	
Rents and other collections at agencies	83,307.14	168,616.49	
Income from investments	3,193.08	2,991.28	
Interest on loans and deposits	12,601.93	15,457.89	
Exchange	6,068.97	153.53	
Total	\$5,289,198.91	\$4,974,818.72	
	Disbursements.		
Steamer expenses	\$3,318,779.15	\$3,195,334.46	
Charter hire, including charter of steamers "Mongolia" and "Manchuria" to date of purchase	312,910.71	743,236.15	
Purchase Money Notes—S. S. "Mongolia" and "Manchuria," due Feb. 1 and May 1, 1912, paid off	205,088.84		
Agency expenses	624,435.40	572,252.60	
General expenses	138,777.86	114,019.64	
Insurance	256,183.80	194,795.46	
Total	\$4,856,175.76	\$4,819,638.31	
Receipts in excess of disbursements	\$ 433,023.15	\$ 155,180.41	
Charge for depreciation and general and extraordinary repairs of steamers	452,105.45	354,456.84	

Disbursements and charges in excess of receipts \$ 19,082.30 \$ 199,267.43  
Compared with the operations of the preceding year, the receipts from the operation of steamers increased \$389,048.26, or 8.22 per cent, rents and other collections at agencies decreased \$85,309.35; and receipts from all other sources increased \$10,641.28, making a net increase in receipts of \$314,380.19, or 6.32 per cent.

Steamer expenses increased \$123,444.69, or 3.86 per cent, resulting principally from an increase of 81,243 in miles run by steamers. Agency expenses increased \$52,182.80, or 9.12 per cent, resulting from an increase of traffic and from the rearrangement of agencies in San Francisco and in the Orient. It was found necessary for the company to use in San Francisco its entire terminal facilities for its own business. General expenses increased \$24,758.22. Insurance increased \$61,388.34, as the insurance on the steamers "Mongolia" and "Manchuria," purchased during the year, is now carried by the company.

After making the usual charge for depreciation and general and extraordinary repairs of steamers, amounting to \$452,105.45, the year's operations resulted in a deficit of \$19,082.30, against a deficit of \$199,276.43 for last year.

The insurance on the company's steamers was renewed and \$256,183.80, the premium chargeable to the year's operations, was charged to the year's expenses.

## Steamers and Other Property Owned

In the early fifties the Pacific Mail Steamship Company acquired the sole ownership of four islands in Panama Bay, i. e., Isla de Naos, Flamenco, Perico, and Culebra. In the

early sixties a one-half undivided interest in these islands was sold to the Panama Railroad Company.

The Pacific Mail Steamship Company erected on these islands shops, storerooms and warehouses, built stone ways, stone seawalls, and made other improvements thereon. During the time when these islands were in the domain of the United States of Colombia they were exempted from taxation, but when the government of the United States of America assumed control of the Panama Canal Zone, it assessed the one-half interest in these islands at \$72,500 and collected taxes upon that valuation. Subsequently the United States government served notice that it would require these islands for canal purposes and condemned them under the right of eminent domain, awarding the Pacific Mail Steamship Company but \$44,000—\$20,000 for the one-half undivided interest, and \$24,000 for the improvements. The islands and the extensive improvements thereon were carried on the books of the Pacific Mail Steamship Company at the nominal sum of \$118,150. The difference between the amount received from the United States government was written off to profit and loss.

The sum of \$452,105.45 was credited to the reserve for depreciation and general and extraordinary repairs of steamers, and charged to the year's income. After charging this reserve with \$264,219.30 for extraordinary repairs and renewals, the sum of \$2,750,969.16 remained to its credit at the close of the year, an increase of \$187,886.15 during the year.

The steamers "Aztec," "Pennsylvania" and "City of Para" were equipped to burn oil. The cost thereof, by which a material saving in the expenses for fuel was obtained, was \$122,500, and was charged to the year's expenses.

## General Remarks

On November 1, 1911, the company acquired the steamers "Mongolia" and "Manchuria" for the sum of \$4,212,783.70, and issued therefor its notes, including interest to the respective dates of their maturity. The payment of this sum and the interest accruing on the deferred payments were distributed equally over a period of sixteen years, and is evidenced by sixty-four notes of \$102,544.42 each, dated November 1, 1911, payable quarterly on February 1, May 1, August 1 and November 1 of each year, secured by mortgage on the steamers. The company has the option to redeem any of these notes prior to their maturity at their present worth on the date of redemption.

Excepting the notes given for the purchase of the steamers "Mongolia" and "Manchuria," the company is free from debts other than those for current expenses. The cash on hand at New York, San Francisco and London, April 30, 1912, amounted to \$265,735.03.

Since the close of the year the purchase money notes maturing August 1 and November 1, 1912, for \$102,544.42 each, have been paid off.

The company's fleet and property have been maintained at its high standard of efficiency.

By order of the Board of Directors,

ROBERT S. LOVETT,  
President.

## No. 1 Assets, April 30, 1912.

	Capital Assets.	April 30, 1912	April 30, 1911
Assets			
Cost of steamers	\$13,184,846.04	\$ 9,024,165.87	
Cost of other floating equipment	346,720.52	346,870.52	
Cost of real estate and other property	432,604.85	550,983.05	
	\$13,904,171.41	\$ 9,922,019.44	
Deduct reserve for depreciation	2,750,696.16	2,562,810.01	
	\$11,213,475.25	\$ 7,359,209.43	

Current Assets.		
Cash .....	\$ 265,735.03	\$ 203,773.16
Agents and pursers .....	169,735.03	127,709.85
Traffic balances .....	141,686.65	42,093.83
Individuals and companies.....	77,472.91	76,800.79
Stocks owned .....	124,357.32	117,190.62
Mexican interior funded debt 5% bonds (\$49,700 face val.).....	22,859.00	22,859.00
Mexican consolidated debt 3% bonds (\$3,000 face value)....	1,027.50	1,027.50
Guatemala internal debt 12% bonds (\$54,700 face value)....	19,800.00	19,800.00
Japanese government special 5% bonds (20,000 yen, face value) .....	8,612.79	8,612.79
Material and supplies .....	104,134.78	157,092.68
	<b>\$ 935,106.41</b>	<b>\$ 776,960.22</b>
Deferred Assets.		
Due from Central American governments .....	\$ 23,790.00	\$ 22,210.00
Individuals and companies.....	19,807.09	8,375.85
	<b>\$ 43,597.09</b>	<b>\$ 30,585.85</b>
Contingent Assets.		
California State Harbor Com- missioners agreement .....	\$ 241,587.45	\$ 266,356.65
Insurance paid in advance.....	121,349.42	57,318.57
Unadjusted accounts .....	21,311.68	
Expenses, open voyages.....	498,582.84	698,781.89
	<b>\$ 882,831.39</b>	<b>\$ 1,022,466.11</b>
Balance to profit and loss.....	\$11,863,994.83	\$11,901,483.74
Total .....	<b>\$24,939,004.97</b>	<b>\$21,090,705.35</b>
Capital Liabilities.		
Liabilities	April 30, 1912	April 30, 1911
Capital stock .....	\$20,000,000.00	\$20,000,000.00
Purchase Money		
Notes: Principal and interest of notes issued in payment for S.S. "Mongolia" and "Manchuria" .....	\$6,357,754.04	
Deferred interest included in notes .....	2,289,004.04	
	<b>4,068,750.00</b>	
	<b>\$24,068,750.00</b>	<b>\$20,000,000.00</b>
Current Liabilities.		
Vouchers and payrolls.....	\$ 116,776.80	\$ 122,121.47
Contingent Liabilities.		
Unadjusted accounts .....	\$ 65,512.38	
Passage orders .....	\$ 98,305.82	142,742.57
Earnings, open voyages.....	655,172.35	760,328.93
	<b>\$ 753,478.17</b>	<b>\$ 968,583.38</b>
Total .....	<b>\$24,939,004.97</b>	<b>\$21,090,705.35</b>

## UNITED FRUIT COMPANY

When the three new steamers now under construction for the United Fruit Company in England are finished and in commission next spring, the company will have, including its English operating company, Elders & Fyffes, Ltd., a total of thirty-seven refrigerating steamers of its own, all of which are new boats within a few years. Of this number twenty-one are operated by the United Fruit Company itself, and sixteen by Elders & Fyffes. The distinction is not highly important, of course, as the English subsidiary is entirely owned by the fruit company, and its perpetuation is a trade, rather than a financial convenience. These thirty-seven boats represent an investment of \$18,000,000, which at the end of a ten-year term will have been entirely liquidated through sinking fund operations. In other words, the United Fruit Company will ultimately have an investment of \$18,000,000, without a dollar of capital against it. And the guaranteed life of these steamers is twenty years, or double the length of time it will take to eliminate the capital obligations issued for their construction.

The operation of this sinking fund in the case of twelve of the English boats is shown by the fact that these steamers, costing £902,000, have already been written down to £580,000.

## ANNUAL REPORT OF THE ALASKA STEAMSHIP COMPANY

Seattle, Wash., April 22, 1912.

To the Stockholders of the Alaska Steamship Company:

There was added to the surplus account on December 31st last, \$152,851.09, which amount represents the net profits for the year 1911, and although \$46,946.82 less than similar results for the preceding year, the figures are considered satisfactory in view of the heavy decrease in shipments of railroad construction material from Seattle to Cordova, due to the completion of the Copper River & Northwestern Railway, which business this company had enjoyed exclusively during the entire period of the railroad's construction. The decrease in gross earnings for the year 1911 as compared with the previous year on this account alone amounted to \$360,935.80. Increases in the general business, however, reduced this loss to \$72,558.04, the gross earnings for the year 1911 being \$1,755,007.86 as against \$1,827,565.90 for the previous year.

The following important transactions have occurred since the last annual meeting:

Contract was closed with the Oceanic Steamship Company on November 17, 1911, for the purchase of S. S. "Mariposa" (sister ship to the "Alameda") for \$300,000.00, which sale was completed upon delivery of the vessel at San Francisco on January 31, 1912. Alterations necessary to fit the vessel for the northern trade are now in course of completion and are estimated to cost approximately \$28,600.00. The "Alameda" and the "Mariposa" are considered to be the two best ships operating between the United States and Alaskan ports and will meet the requirements of passenger and fast freight service for a number of years to come.

Betterments to S. S. "Victoria," consisting of reboiling, installing oil burning equipment and rebuilding a portion of house, at an aggregate cost of \$150,000.00, were begun in December and will be completed about May 1st.

S. S. "Cordova," which was launched at Wilmington, Del., about January 1st and has just been completed by Harlan & Hollingsworth Corporation, has been purchased by this company for \$260,000.00, delivered at San Francisco not later than May 31st, 1912. The vessel is of steel, double bottom, oil burner, 251 feet 11 inches long, 41 feet beam, 20 feet depth, 3,000 tons cargo capacity, with passenger accommodations for 57 first class and 150 steerage and on trial trip maintained speed of 12½ knots per hour light and is capable of making 11½ knots per hour loaded.

S. S. "Latouche," which was built as a steam schooner with a well deck, has been provided with shelter deck throughout, making her a very much better ship for the northern trade. Alterations and additions to the Latouche, which are similar to those made on the Seward last year, were completed on March 19, 1912, at cost of approximately \$30,000.00.

The "Dirigo," which several years ago was changed to lumber carrying schooner, also had shelter deck extended so as to make her available as a general carrier and cannery tender. This work was completed at cost of \$8,700.00, which also included the retubing of her boilers.

Your attention is respectfully invited to the statement of assets and liabilities as of December 31, 1911, and the profit and loss accounts, by years, from the organization of the company, viz:



## ALASKA STEAMSHIP COMPANY.

## Statement of Assets and Liabilities, Dec. 31, 1911.

<b>Assets—</b>		
Property account .....	\$2,942.96	
Less depreciation reserve .....	604,709.86	\$2,337,820.10
Prepaid expenses—		
Voyage expenses .....	18,911.56	
Insurance premium .....	107,170.40	126,081.96
Current assets—		
Notes receivable .....	54,666.66	
Accounts receivable .....	71,062.12	
Agents and pursers .....	33,999.08	
U. S. government .....	79,728.06	
Insurance underwriters .....	217,932.56	
Supplies .....	13,312.53	
Cash and demand loan .....	720,179.30	1,190,880.31
<b>Total .....</b>		<b>\$3,654,782.31</b>
<b>Liabilities—</b>		
Capital stock .....	\$3,000,000.00	
Current accounts payable .....	73,574.79	
Profit and loss .....	581,207.58	
<b>Total .....</b>		<b>\$3,654,782.37</b>

## Statement of Profit and Loss Account.

	1908	1909	1910	1911
Voyage earnings .....	\$721,699.42	\$769,921.49	\$664,489.90	\$599,691.38
Other earnings .....	16,126.88	103,189.03	47,816.02	51,560.38
<b>Total .....</b>	<b>\$737,826.30</b>	<b>\$873,110.52</b>	<b>\$712,305.92</b>	<b>\$651,251.76</b>
<b>Deduct—</b>				
General main- tenance and lay-up ex- penses .....	\$ 95,523.80	\$105,747.93	\$138,587.55	\$108,800.72
Expenses pre- vious years .....		13,844.66	29,273.50	25,691.24
Gen'l. expenses .....	137,791.67	128,928.15	125,436.10	142,432.91
<b>Total .....</b>	<b>\$233,315.41</b>	<b>\$248,520.74</b>	<b>\$293,297.15</b>	<b>\$276,924.87</b>
<b>Net earnings from opera- tions .....</b>	<b>\$504,510.83</b>	<b>\$624,589.78</b>	<b>\$419,008.77</b>	<b>\$374,326.89</b>
<b>Deduct depre- tion .....</b>	<b>258,589.46</b>	<b>245,278.50</b>	<b>219,210.86</b>	<b>221,475.80</b>
<b>Adjustment of property val. Addition ....</b>	<b>34,021.50</b>			
<b>Deduction .....</b>	<b>37,247.43</b>			
<b>Total .....</b>	<b>\$292,510.96</b>	<b>\$208,031.07</b>	<b>\$219,210.86</b>	<b>\$221,475.80</b>
<b>Surplus before deducting di- vidends .....</b>	<b>\$211,999.87</b>	<b>\$416,558.71</b>	<b>\$199,797.91</b>	<b>\$152,851.09</b>
<b>Dividends .....</b>	<b>150,000.00</b>	<b>250,000.00</b>		
<b>Surplus after deducting di- vidends .....</b>	<b>\$ 61,999.87</b>	<b>\$166,558.71</b>	<b>\$199,797.91</b>	<b>\$152,851.09</b>
<b>Recapitulation.</b>				
Surplus, 1908 .....	\$ 61,999.87			
1909 .....		166,558.71		
1910 .....			199,797.91	
1911 .....				152,851.09
<b>Total .....</b>				<b>\$581,207.58</b>

J. H. YOUNG, President.

William Cramp & Sons Ship and Engine Building Company and Subsidiary Companies, I. P. Morris and Kensington Shipyard Company, annual report:

The following is extracted from the above report, under date of June 27th, 1912, for the fiscal year ending April 30th, 1912:

The directors' report:

"There is very evidence of a largely increased volume of shipbuilding."

Net earnings all departments, after deduct- ing insurance and taxes but not general in- terest and interest on bonds .....	\$ 473,021.88
Interest on bonds and general interest .....	264,913.95

Net surplus .....	\$ 208,107.93
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## Payments and expenditures—

In reduction of capital debt, redemption bonds \$	245,000.00
Purchase real estate, machinery, etc. ....	111,819.51
<b>Capital assets—</b>	
Real estate and machinery .....	\$13,216,198.47
Cash current assets, etc. ....	1,970,276.72
Deferred assets, in adjustment .....	667,880.29
	<b>\$15,855,346.48</b>
<b>Liabilities—</b>	
Capital .....	\$ 6,098,000.00
Bonds and mortgages .....	5,184,912.00
Current and accrued .....	604,988.50
Profit and loss .....	3,966,445.98
	<b>\$15,855,346.48</b>

## THE BUSINESS AND FINANCIAL OUTLOOK

Owing to the general interest felt in the question of business revival, and for the purpose of learning the extent of the improvement in trade, this bank has secured the views of a number of representative business men. The aim has been to obtain unbiased opinions regarding what is actually going on at the large trade centres.

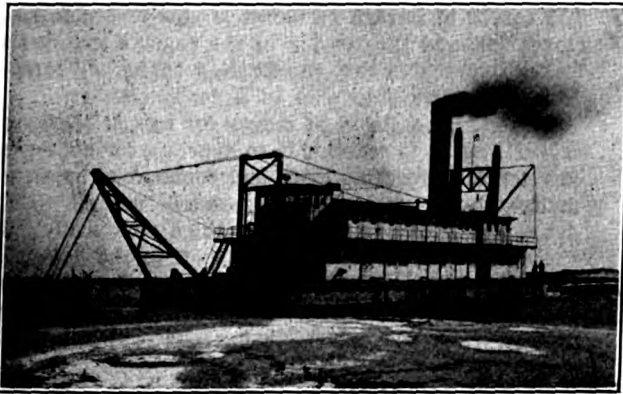
This canvass covered the greater part of the United States. It took in most of the important manufacturing and retail centres, and the inquiries specifically asked (1) how general business conditions today compare with those existing at the same time last year; (2) to what extent the presidential campaign is likely to unsettle general trade; and (3) what is the strongest factor in the business and financial outlook. The replies show that business is much better today than it was last year. The gains noted range from ten to twenty per cent or more and from everywhere special attention is called to the fact that people are much more optimistic now than they were last year when labor was only partially employed and when the preliminary struggle for the presidential nominations was before the country. One merchant in Cleveland describes conditions as "infinitely ahead of last year." From one of the greatest dry goods concerns in the west comes the assurance that its customers, with very few exceptions, report generally improved conditions. From St. Paul there is assurance that the business outlook was never more encouraging, and that the situation has vastly improved. In Salt Lake City the outlook is said to be much better because of the bountiful crops and the higher prices obtained for lead and copper.

An important interest in Tennessee reports that sales and collections have greatly improved and that labor is profitably employed. In Denver business conditions are said to be highly encouraging and the volume materially ahead of what it was last year. In Arkansas "financial conditions are good, general trade fair, and the crop prospects satisfactory." St. Louis shows up better than a year ago, and the excellent crop outlook is creating an optimistic feeling there. Such reports are typical of those received from other sections, and with the exception of one or two cities where business suffered severely from the floods of a few months ago, the story is one of increased activity and greater confidence. From all directions comes the assurance that better times are ahead and that people are feeling more hopeful about the future. It is evident, at the same time, that notwithstanding this improvement many are disposed to proceed slowly and not to engage in speculation. There is no disposition to overtrade and the tendency of most merchants seems still to be to buy only such merchandise as a quick market requires. The small merchant is reported to be carrying abnormally low stocks in an effort to avoid mishaps and to make certain of his market before committing himself at all heavily. Advices from many cities indicate an excellent fall business, and it is plain that some large advance orders are being received.

It is noteworthy also that the country has pretty well

# ELLICOTT MACHINE CORPORATION

BALTIMORE, MD.



Twenty-inch Steel Hull Dredge

**Nelson Z. Graves**

built by

**ELLICOTT MACHINE  
CORPORATION,**

**BALTIMORE, MD. 1911**

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Cape May, N. J.**

We build hydraulic dredges to handle all materials, except solid rock, in any quantity—to any distance—to any height. **Correspondence solicited.**

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Producers and Shippers of

**STEAM and DOMESTIC COAL**

Phones: Main 8040

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NEWCASTLE**

**FAIRFAX SMITHING  
GEORGES CREEK CUMB SMITHING  
SCRANTON ANTHRACITE  
FAIRFAX FOUNDRY COKE**

# MARINE BOILERS

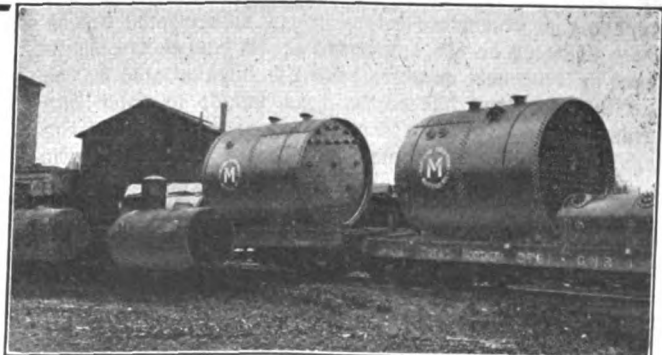
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**Manitowoc Boiler Works Company**

*Marine Boiler Specialists*

**MANITOWOC, WISCONSIN**

**Chicago Office—919 Insurance Exchange Bldg.**



Marine Boilers Destined to the Pacific Coast

WHEN WRITING TO ADVERTISERS, PLEASE MENTION THE PACIFIC MARINE REVIEW

recovered from the complications incident to the burden of supporting a large unemployed class; a year ago thousands of men were idle. With the revival in general business, especially in the New England mills, these wage earners have been put to work at fair pay, with the result that they find it unnecessary this year to draw heavily against their savings bank balances in order to provide living expenses. This marks a distinct change from the conditions existing a year ago and shows that, notwithstanding that fact that a few manufacturing concerns are still running on reduced schedule, many of the largest mills have their men well employed at relatively high wages. This activity is extending and it is evident that, barring unforeseen complications, many manufacturing industries will soon be compelled to work overtime so as to satisfy the needs of their customers. The railroads have entered the steel market in quite a large way but much heavier orders will be released as soon as it is seen that the promise of a bountiful harvest has been fulfilled.

It is everywhere recognized, however, that the country must raise excellent crops in order to provide the basis for genuine trade recovery, for, as one correspondent puts it, "The crops form the real keynote to the whole situation this year."

The disposition is to push the harvesting operations with great vigor in an effort to market the crops as soon as possible. Conditions in the south are extremely favorable and the banks of that section are in a very strong

position. Present indications point to another enormous cotton crop, and since that crop makes exchange faster than any other crop raised, Europe will have to make heavy remittances for its purchases of this staple. In addition to supplying the wheat belt with large amounts of bank reserve money, the New York banks will probably be called upon before long to send gold to South America. The course of foreign exchange is now favorable for such movement, and the tension of the London money market makes it probable that the English banks will arrange to have New York ship gold to Argentina direct.

There will be plenty of money for mercantile borrowers this fall but it is reasonable to expect a further hardening in rates for both time loans and commercial paper, which, under the circumstances, is perfectly natural. Throughout the year money rates have ruled abnormally low and there has been a decided falling off in the demand from mercantile borrowers. Now general trade is quickening, and money is becoming everywhere more actively employed. This movement, again, reflects a progressive recovery in business affairs.

To sum up, the feeling is that business is not going to be disturbed by politics, nor, if the crops turn out well, is it going to be held back by the usual vicissitudes of a presidential campaign. Mercantile interests generally are in a sound condition, and because of the thoroughgoing liquidation that has taken place in all lines there are today very few weak spots.

THE FOURTH NATIONAL BANK

August 1, 1912.

of the City of New York.

## TRANS PACIFIC NOTES

### THE PORTLAND-ORIENTAL STEAMSHIP SERVICE

With the withdrawal of the above service under the management of Messrs. Frank Waterhouse & Company, Inc., Portland and the state of Oregon is in a sad plight. We fully appreciate that if sufficient inducement had been offered this firm by railroad interests as well as by the city of Portland to shoulder the losses which are bound to accrue in a regular steamship service which at times carries full outward bound cargoes but inefficient cargoes on the homeward voyages, the Portland Oriental Line would have regularly continued.

The Oriental Committee of the Portland Chamber of Commerce informs us "that every inducement in the way of pilotage, dockage and freight handling and perhaps including a small bonus, would be offered to steamship companies interested." It is, in our opinion, even with such undefined and slow developing inducements impossible during the time of high charter rates due to scarcity in ocean tonnage that steamship interests can be attracted unless losses accruing on the homeward bound voyage are shouldered in the fullest measure, which is substantiated by the fact that Portland has so far been unable to enter into agreements with other steamship agencies to require the regular service of the now withdrawn Portland-Asiatic Steamship Company.

The price of bunker coal in Portland or the delay and extra cost for calling at B. C. ports for coal has also to be considered.

The Waterhouse Company have notified interested parties that after the sailing of their steamer "Hercules" in August, they will no longer run steamers from Portland, Ore., to Oriental points under a regular schedule. They will, however, load steamers in Portland as opportunity warrants, and are reported to have chartered the "Fitzclarence" and the "Ockley," for September and October, respectively. The "Fitzclarence" is a re-charter from the Robert Dollar Company, and the rate she receives is 8s per d. w. ton per month, with delivery in Portland and

redelivery Hongkong. The "Ockley" has been sub-chartered from Messrs. MacNear, San Francisco, at 6s, for a Transpacific round voyage, with delivery and redelivery Puget Sound.

### TRANSPACIFIC BERTH

There is a fair demand for wheat and flour from Japan and Hongkong for nearby shipment, but Millers are experiencing some difficulty in securing space in the regular line steamers, while outside tramp tonnage is scarce and held at high rates. While the tariff rate on flour is \$3.50 Japan, \$4.50 Hongkong and \$5.00 Manila, the line managers are asking and being paid \$1.00 per ton premium for space.

It should be understood that these are the minimum rates and that the individual lines may, if they elect, charge higher rates, and in all probability some of the lines will take such action, on account of the extreme scarcity of steam tonnage, and the heavy offerings for the fall and winter months. This increase in the flour rate is indicative of the general world improvement in shipping conditions.

### FREIGHTS AND FIXTURES

We publish beneath the general monthly freight report compiled by Messrs. Hind, Rolph & Co.

Pacific Marine Review,  
379-380 Arcade Annex,  
Seattle, Wash.

Dear Sirs:—During the past month, rates generally have been very well maintained, and, in some instances, as shown below, rather remarkable advances have taken place. This applies particularly to the charters effected for barley from San Francisco to Europe. When we last wrote you, the rate was nominally 35s, at which figure several vessels were chartered. Rates then moved up to 40s, and last week, we secured for one of our own vessels, the "Golden Gate," 45s, which is the best rate paid for this voyage for very many years past.

# Chesley Tug & Barge Company and Crosby Tow-Boat Company

W. R. CHESLEY, Manager

TUGS:

"Alice," "Cornelia Cook," "Harold C.," "Winona," "Katy," "Tempest," "Chema."

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They generate their own gas under low pressure, therefore no generating or compression plants on shore are necessary. With one full carbide they operate continuously for from six months to a year.

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FIRE SUPPLIES AND THE  
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The demand for tonnage to lift the northern wheat crop is very active, sailing vessels having been taken freely at 40s to 42s 6d, which is now the rate for anything able to make this year's loading. Several steamers have also been taken at 45s up to 48s 9d, and more are wanted.

With regard to lumber freights, there is not a great deal to advise. Tonnage is wanted, but there are so few ships available that business is very difficult to do. We beg to give you below a few of the most interesting fixtures:

"Ernest Legouve," "Amiral Cecille," "Asnieres," "Anne De Bretagne," "Vincennes" and "Babin Chevaye," all at 35s, San Francisco to Europe; the "Bayard," "Ernest Reyer" and "Bouchamp" at 37s 6d; the "Hoche" at 40s, and the "Golden Gate" at 45s.

For wheat from the north, the "Thiers," "Vercingetorix," "Jersbek" and "Boadicea" get 40s; the "Eudora" and "Rene" 41s 3d, and the "Rene Kirviler" and the "Oweenee" 42s 6d.

The steamer "Harley" gets 45s, the "Arabien" 47s 6d, and the "Willesden" 48s, 9d, all with the option of the Mediterranean at 1-3 more, for wheat from the north.

A "Strath" steamer has been chartered on time, delivery San Francisco, redelivery Australia, at 7s 6d and the "Vennachar" gets 7s 3d for the same voyage, while the "Fitzclarence" gets 8s on time charter, delivery this coast, redelivery Hongkong.

Yours very truly,  
HIND, ROLPH & CO.

#### H. E. MOSS & CO.'S SEMI-ANNUAL STEAMSHIP CIRCULAR

"In our last semi-annual steamship circular of January 1, 1912, we stated that we fully expected during this year and next steamship owners would reap a reward such as they had not experienced during the last decade; six months have barely passed, and although there may have been the usual setbacks such as are generally experienced each summer, we have no doubt in asserting that 1912 and 1913 will leave little to be desired.

Our imports and exports still increase, notwithstanding the effects of the recent coal strike, and trade generally at home and abroad is as good as can be expected. The presidential election in the United States pursues its weary way, but when once settled, as it will be this autumn, confidence will be restored and trade boom there once more. Many years' experience proves that such improvement in the U. S. A. is bound to reflect itself on Europe particularly. The opening of the Panama Canal, expected next year, has yet to be dealt with, and is certain to create enormous developments in steam shipping interests especially, which are bound to be shared by the principal countries of the world.

The continual disturbances in the labor market are, after all, proving a blessing in disguise to shipowners, for although the tonnage under construction was never greater, strike after strike of workmen (and not confined to our own country) have so retarded the completion of vessels building, in some cases by nearly a year, that the demand, apart altogether from the losses, is still greater than the supply, and is quietly absorbing the new tonnage as it is delivered.

Very few orders for building cargo steamers are presently obtainable, the high prices ruling and the late deliveries having checked business, thus further tending to improve the situation for ship owners whose steamers are already afloat or likely soon to be so.

For years past we have predicted the enormous development in the general adoption of oil fuel for marine and other purposes. We have also asserted that the internal combustion engine is bound to come. Both these factors are now far beyond the experimental stage, and in an-

ticipation of the great demand for oil fuel, not only for the Argentine and other great railways, besides the ever increasing requirements of the navies of the world, and various other requirements hitherto supplied by coal, large depots are being erected on most of the trade routes, not yet supplied. - urther, to supply the coming demand, some 70 tank steamers are presently under construction, for wealthy oil corporations who can well afford to risk enormous sums on the anticipated developments.

Freights still continue on a high level, and there is every indication of rates being maintained for some time to come.

Most builders and engineers are full of work, in many cases for two years ahead, but there are still a few who can give fairly quick delivery. Cost of materials and wages continue to advance in all branches of ship-building and engineering, and are likely to still further increase. The opportunities for building cheap tonnage such as we have been accustomed to, in our opinion, have passed, and we doubt if they will ever come back again. Prices for building are fully 25 per cent higher than two years ago, and many special steamers of large tonnage, exceptional speed and good specifications, which were ordered some time ago by far-seeing ship owners, have recently been sold at very large profits, in some cases amounting from £20,000 to £30,000.

The demand for nearly new ready tonnage and for second hand steamers was never greater, and such as are for sale command very high prices, as comparatively few are available, and those afloat are so profitably employed that it is frequently difficult to bring business about.

We are, gentlemen, yours respectfully,

H. E. MOSS."

July 15, 1912. Liverpool, England.

#### MARKET REPORT Salmon

The following report dated at London, July 27, 1912, is compiled by Messrs. Anderson & Coltman, Ltd., brokers, and may prove of interest to our readers:

Alaska Reds—Although stocks are very small the demand is not sufficient to maintain values, and a determined seller this week had to accept 28s in order to effect a clearance.

Medium Reds—Are in slightly better request at from 25s to 26s for Talls.

Pinks—There has been a little movement both in London and Liverpool, but at prices which have left importers considerable losses.

Nominal values remain unchanged at from 16s to 17s 6d for Talls, 18s for Flats and 24s for ½ Flats, the two latter sizes being of British Columbia pack.

An offer has been received in London of Alaska Pink Talls, ready for shipment from the Pacific Coast at 15s 6d C. I. F. The buyers naturally assume that this indicates considerable weakness in the American market.

British Columbia Sockeye—The demand for ½ Flats at 49s has eased off, and there are more sellers than buyers at this price.

1 lb. Flats are held for 38s to 38s 6d. There are still 1 lb. Flats of late run being offered at 32s.

Cohoes—1 lb. Flats can be bought from 30s to 32s, according to quality.

1912 Pack Sockeye—There are sellers of ½ lb. Flats ready packed at 47s overland, but buyers are not finding this price attractive.

1 lb. Flats are being offered at 39s steamer shipment, but buyers seem disposed to wait until the result of the pack is more definitely known.

At the yards of the Seattle Construction and Dry Dock Company, the new steel passenger steamer "Potlatch" was launched at 6 p. m., July 18th, in the presence of officials of the Seattle Carnival Association, and a large number of invited guests. The vessel was christened by Miss Marjorie Kittinger. The launching of the Potlatch marked an epoch in the history of the Seattle Construction and Dry Dock Company, which made a record on this contract. The "Potlatch" was built in forty days and when leaving the ways the vessel had steam up and was almost ready for immediate service. The new steamer is of the same general type as the "Sol Duc," "Sloux" and "Kulshan" and will be placed on the Hood Canal route, replacing the stern wheel steamer "State of Washington."

The "Potlatch" measures 158 feet over all and 150 feet between perpendiculars. Her other dimensions are: Breadth, 27 feet; depth 8 feet 9 inches; indicated horse power 750; contract speed, 13 knots. She is an oil burner and is equipped with one triple expansion engine and two Seabury water tube boilers. There are 28 passenger state rooms with accommodations for 62 passengers.

The new steel passenger steamer "Tacoma," now being built at the yards of the Seattle Construction & Dry Dock Company, will be of the following dimensions: Length over all, 221 feet; length between perpendiculars, 215 feet; breadth, 30 feet; depth, 10 feet; indicated horse power, 3,500; contract speed, 19 knots. She will be driven by one four-cylinder triple expansion engine and will have two Ballin water tube boilers. Oil fuel will be used. The Tacoma is also being constructed for the Inland Navigation Company.

In addition to the above, the following vessels are under construction at the yards of the Seattle Construction & Dry Dock Company:

Two submarine torpedo boats for the Chilean government.

A sea-going suction dredge 230 feet long, to be named "Col. P. S. Michie" and operate at Coos Bay, Ore., for the United States government.

A steel freight steamer 142 feet over all, to be named "Sockeye," being built for the Inland Navigation Company.

U. S. submarine torpedo boat F-3 (No. 22). Delivery August 5, 1912.

U. S. submarine torpedo boat F-4 (No. 23).

U. S. submarine torpedo boat H-3 (No. 30).

U. S. submarine torpedo boat K-4 (No. 35).

#### MOORE & SCOTT IRON WORKS TO BUILD FERRY BOAT

An order has been placed with the Moore & Scott Iron Works, of San Francisco, by the Western Pacific Railway Company, for a steel ferry boat, to ply between Oakland and San Francisco. The vessel will be built at the Moore & Scott shipyard at Oakland harbor, and will cost approximately \$300,000.

The hull and decks will be of steel and the vessel will be provided with an extra number of water tight bulkheads and will be as nearly unsinkable and fire proof as it is possible to build. It will be 230 feet over all, 62 feet 6 inches in beam, and will have a moulded depth of 19 feet 6 inches. It will be driven by twin screws at each end and will burn liquid fuel.

In appearance the Gould ferry will resemble the boats of the Key Route, but will be of stronger build and much speedier. This vessel is to be ready for service in ten months and will run in connection with the "Telephone," which now handles the Western Pacific transbay passenger business.

#### BRITISH SHIPPING STATISTICS

Beginning January 1, 1912, vessels landing or embarking bullion, specie, or mails only have been included in British official returns as vessels with cargoes; previously they were included as vessels in ballast. On this basis the net tonnage of vessels entered at ports in the United Kingdom from foreign countries and British possessions with cargoes during the six months January-June, 1912, amounted to 21,274,892 and the clearances aggregated 27,538,697 tons, as against 20,006,491 tons entered and 28,686,708 tons cleared in the first half of 1911. The United States was represented in the first six months of 1912 by 295,076 tons entered and 165,823 tons cleared. With regard to the coasting trade, the tonnage entered with cargoes during the six months January-June, 1912, amounted to 15,500,865 and the tonnage cleared to 15,274,571, as against 15,797,873 tons entered and 15,516,592 tons cleared in the corresponding period of 1911.

According to Lloyd's Register, the total tonnage (excluding warships), representing 529 vessels building in the United Kingdom on June 30 of this year was 1,774,040, which was about 87,000 tons more than on March 31 last, and nearly 300,000 tons in excess of the tonnage which was under construction in British shipyards at the close of the June quarter a year ago. This number is made up of 492 steam vessels, constituting a gross tonnage of about 1,762,900 tons, and 37 sailing vessels, with a tonnage of 11,100 tons.

Of the vessels under construction in the United Kingdom at the end of June, 389, with a tonnage of about 1,247,600, are under the supervision of the surveyors of Lloyd's Register, with a view to classification by the society, and, in addition, there are 102 vessels of 381,400 tons building abroad under the society's survey. This makes the total number of vessels building at the present time under supervision of Lloyd's Register 491 and a tonnage of 1,629,000.

It is estimated that the other nations have a million tons on the stocks, so that there seems to be some probability that before very long the present shortage in ships will be overcome and ocean freight rates reduced. Much of the new shipping is said to be of special types and intended for special trades.

Nothing is more significant in the evolution of shipping than the rapid displacement of the sailing vessel. The aggregate tonnage of the world's sailing vessels is placed at a little more than 4,000,000 tons, as against an aggregate tonnage for merchant steamers in excess of 40,000,000 tons. Placing 1 ton of steam as equal to 3 tons of sail, steamships, while nominally representing only 10 times the tonnage of sailing vessels in reality do 30 times as much of the world's carrying trade. Of the total steam tonnage, about 17,700,000 tons are registered in the United Kingdom and 1,600,000 tons in the British colonies, so that nearly one-half of the total steam tonnage of the world is registered in the British empire. Some of the nations are, however, pressing Great Britain in the matter of new tonnage at this time. Since 1911 the United Kingdom register has been increased by 340,000 tons of shipping, that of Germany by 162,000 tons, Japan 141,000 tons, and Norway 138,000 tons.

There are 818 vessels equipped with refrigerating apparatus, while 258 steamers and 50 sailing ships have been built to carry petroleum in bulk. About 242 vessels are so arranged that they can use liquid fuel, the two most important being Japanese liners, each of 13,000 tons burden. Of the 30,000 vessels of 100 tons and upward afloat, only 375 steamers and 13 sailing vessels, according to Lloyd's Register, are provided with wireless installations.

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### MARINE INSURANCE NOTES

#### WHO PAYS?

Rather an interesting question has been agitating the minds of the local underwriters the past month and up to present writing appears to be unsettled.

It appears that in March last a certain steamer sailed from a port on the west coast of the United States bound for the Orient. On March 6th heavy weather was encountered and at 10 p. m. a heavy sea broke over the stern doing considerable damage, and shortly after, as stated in the protest, it was noticed that the rudder was not working well. On March 7th at 2:20 p. m. it was found that the rudder was broken. Fearing to continue the voyage with the vessel in that condition, the course was changed for Puget Sound and steps were taken to make a jury rudder, using ships gear and a part of the cargo for that purpose.

On careful calculation of the longitude of the steamer it was found that on March 7th at 1 a. m., that is between the time the damage to the rudder was supposed to have been done and the time when the damage was discovered and general average sacrifices were made, one set of insurance policies on the steamer had expired and a new set had come into force. The question arose as to what set of policies should pay for the sacrifices and expenses subsequent to the discovery of the actual damage and the deviation in the voyage.

On the one hand it is contended that as the general average sacrifices were a direct result of a damage admitted, for the sake of argument, to have occurred prior to the expiration of the first set of policies and the necessity for which grew out of that damage, then the first set of policies should bear the loss. On the other hand it is claimed that at the time the first set of policies expired the steamer, although damaged, was in physical safety and that the first set of policies were not concerned in any expenses or losses subsequently incurred.

It would seem as if the true test would be as to who would have been liable had the steamer become a total loss subsequent to the discovery of the damage to the rudder. Suppose that subsequent to the discovery of the damage, the rudder, by reason of its disabled condition, had thrashed about so as to cause the butts to open and the steamer to founder, would that be considered so direct and continuous a result of the original damage as to fasten the loss on the policies in force at the time the damage was sustained. Such a position seems hardly tenable to carry the illustration further. Supposing that after steaming back for several days the steamer ran ashore through her inability to steer by reason of the damage to the rudder and became a total loss, could

that be considered a direct and continuing result of the original damage?

In contending that the second set of policies should bear these general average sacrifices and expenses, one average adjuster closes his argument as follows:

"Taking up the item above reserved, the general average losses, they were incurred to avoid further damage. If the peril of further damage had culminated in loss, under the circumstances of this case, that peril, and not the pre-existing damage, would have been the proximate cause. The master in incurring the general average losses, was actuated by that peril. That peril, consequently, was the proximate cause of the general average losses.

"In *Montgomery vs. Indemnity Mutual* (1901), 1 W. B. 152, Justice Mathew said:

"What is sacrificed in general average ought, in my judgment, to be treated in principle as lost by the peril averted."

"The Marine Insurance Act, 1906, provides, Sec. 66:

"(1) A general average loss is a loss caused by or directly consequential on a general average act. It includes a general average expenditure as well as a general average sacrifice.

"(2) There is a general average act where any extraordinary sacrifice or expenditure is voluntarily and reasonably made or incurred in time of peril for the purpose of preserving the property imperiled in the common adventure.

"(6) In the absence of express stipulation, the insurer is not liable for any general average loss or contribution where the loss was not incurred for the purpose of avoiding, or in connection with the avoidance of, a peril insured against.

"Since the proximate cause of a general average loss is the peril which exists at the moment when it is incurred, the peril of, of future loss, there is no ground for the presumption that constructively it occurred at any other time. The policy in force at that moment is the one liable for it.

"At the time agreed, the second set of policies attached upon the vessel, her stores, gear, etc., including, undoubtedly, those which were subsequently sacrificed.

"There can be no doubt that if, subsequently, a storm had sunk the vessel, or she had been otherwise lost, such loss would have constituted a claim upon these second policies.

"After the policies attached, the master deemed it necessary to appropriate certain parts of the ship, her stores and cargo to bring the adventure to a port of safety. At

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the time the policy attached, and until so appropriated and sacrificed, these things were not a loss or a damage.

"When they became a loss, the policy was in force. The peril to avert which they were incurred, was one of which these policies ran the risk. We see no reason why these policies should not contribute to these losses."

#### THE "HARTER ACT"

Senator Nelson has introduced in the senate a bill for the amendment of the "Harter" Act, the provisions of the bill being in part as follows:

"That it shall not be lawful for the manager, agents, master, or owner of any vessel transporting merchandise or property between the ports of the United States and foreign ports to insert in any bill of lading or shipping document any clause, covenant, or agreement whereby it, he, or they shall be relieved from liability for loss or damage arising from negligence, fault or failure in proper loading, stowage, custody, care or proper delivery of any and all lawful merchandise or property committed to its or their charge (or from faults or errors in the navigation or management of said vessel, or whereby its or their liability is limited to less than the market value of such merchandise or property at the time and place of shipment). Any and all words and clauses of such import inserted in bills of lading or shipping receipts shall be null and void and of no effect."

Another amendment proposed in the bill is as follows:

"That if the owner of any vessel transporting merchandise or property to or from any port in the United States of America shall exercise due diligence to make the said vessel in all respects seaworthy and properly manned, equipped and supplied, neither the vessel, her owner, or owners, agent, charterers (or master) shall become, or be held, responsible for damages or loss resulting (from latent defect in said vessel) from dangers of the sea or other navigable waters, acts of God, or public enemies, or the inherent defect, quality, or vice of the thing carried, or from insufficiency of package, or seizure under legal process, or for loss resulting from any act or omission of the shipper or owner of the goods, his agent or representative, or from saving or attempting to save life or property at sea, or from any deviation in rendering such service, and when the vessel is engaged in transporting merchandise or property between ports in the United States of America, neither the said vessel, her owner or owners, agent or charterers shall become or be held responsible for damage or loss resulting from faults or errors in navigation or in the management of said vessel."

The principal, in fact the radical, change in the statute is seen in the last few lines wherein it is stated that owners of vessels engaged in transporting merchandise between ports in the United States shall, under certain conditions, not be held liable for loss or damage resulting from faults or errors in navigation.

The original act granted those immunity to all vessels transporting merchandise to and from any port in the United States, whether domestic or foreign.

The introduction of this amendment, coming close on the heels, as it does, of the decision of the Supreme Court in the case of the "Jason" is rather significant, and it now remains to be seen what Congress will do. The "Jason" case was discussed in the June issue of the Pacific Marine Review and it will be remembered that the Supreme Court gave a perfectly, not only technical but reasonable, interpretation of the act.

As no action on this amendment is likely to be taken at this session of Congress a full discussion of the same is deferred until a later issue.

#### CONCEALMENT MATERIAL TO MARINE INSURANCE

That in order to maintain the validity of marine insurance policies there shall be no concealment of material facts from the underwriters is again shown in the case of the "British Standard," recently decided in the King's Bench Division.

It appears that this steamer while on a voyage from Cardiff for Rio Janeiro with a cargo of coal was lost in May, 1910, under, as considered by some of the underwriters, rather suspicious circumstances. During the course of the trial, particularly in the higher court, the suspicious circumstances were eliminated, but it was brought out that the ship and freight were insured to full value and that there was also a line on disbursements of £5,500. All of this was disclosed to the underwriters and the risks were accepted with this full knowledge. Had the disclosures stopped there full recovery would undoubtedly have been had under the policies, but it was disclosed that in addition to these insurances the owners had also placed with the Mutual Clubs a further line of £6,000 of which no mention was made to the underwriters and the failure to disclose this fact was considered a concealment of a material fact which might have influenced underwriters in their consideration of the risk, and judgment was given against the claimants under the policies.

This decision is even stronger in favor of underwriters than was that of the Gunford, decided last year and of which a full report was given in these columns.

#### THE COMMITTEE OF LLOYDS REGISTER AND THE VERITAS AUSTRO-UNGARICO

An agreement has been arrived at between the commission of the Veritas Austro-Ungarico and the committee of Lloyds' Register of British and Foreign Shipping with the view of a joint working of the two institutions for the purpose of:

- (a) To improve the organization of the Veritas.
- (b) To Give owners of vessels of the Austro-Hungarian marine wherever built the advantage of classification for their vessels with both societies on the basis of surveys by one organization only as against two hitherto, with consequent reduction of expenses and saving of time.

The Veritas Austro-Ungarico having adopted the rules of Lloyds' Register in their entirety, vessels can only be classed in the Veritas Austro-Ungarico register book provided such vessels can at the same time be classed in Lloyds' register book.

For new vessels in iron and steel, classification of which is desired in the Veritas, the same can only be obtained by classing the vessels in Lloyds' Register and the Veritas Austro-Ungarico simultaneously at a fee of 20 per cent in excess of the fee given in the rules of Lloyds' Register for vessels built under special survey.

No extra fee beyond that at present charged under the rules of Lloyds' Register will be enforced for the testing of material.

For any other surveys held at ports outside of Austro-Hungary, no extra fee will be charged beyond that at present charged by Lloyds' Register.

The agreement is in force since July 1, 1912.

The joint office of the Veritas Austro-Ungarico and Lloyds' Register of British and Foreign Shipping at Trieste is situated at the Exchange building of the Chamber of Commerce and Industry at Trieste.

[This new agreement gives underwriters a larger field to work upon in the future, insuring vessels under this registry on the same condition as vessels are insured under British Lloyds and is a credit to the flag of Austro-Hungary.—Ed. Note.]

## MARINE MISHAPS

"EXPANSION," schr., from Grays Harbor, April 17th with lumber for Valparaiso arrived at Tahiti prior to July 9th in distress. It is reported that the cargo would have to be discharged.

"BERTHA DOLBEER," schr., from San Francisco July 9th for Grays Harbor was in collision with the Br. str. "Tuscarora" and suffered considerable damage. She was towed into port by the str. "Johan Poulsen."

"DAUNTLESS," schr., from San Francisco July 13th for Grays Harbor was towed back to port by the tug "Sea Prince," having been in collision with the str. "Roanoke." A large hole was torn in the starboard side below the fore rigging.

"ROANOKE," see above. Damage unknown.

"HUGH HOGAN," schr., from San Francisco July 13th for Bandon drifted ashore on the beach about a mile south of the Cliff House but was subsequently floated with the aid of two tugs. Damage slight.

"C. T. HILL," schr., while making the entrance to Nehalem on July 27th went ashore on the south spit and is now reported as a total loss and abandoned to the underwriters.

"F. A. KILBURN," str., from San Francisco July 31st for Eureka reports that fire broke out in the engine room and before it could be extinguished damage to the extent of about \$6,000 was done. The fire was extinguished by the members of the crew.

"NEBRASKA," fishing str., was cut in two at Neah Bay on August 2nd, by an oil tanker, name unknown.

## THE FIRST CASE UNDER A NEW LAW

The first case of settlement for injuries under the new workingmen's compensation act was recently passed upon and a recital of the facts of this particular case will illustrate the main features of the new law better than the law itself possibly could.

## MARINE STEAM TURBINE AS IT RELATES TO THE CURTIS SYSTEM

**A** PART from the turbines and their action, machinery installations with Curtis steam turbines for propelling purposes differ from the Parsons' type principally in the division of the total power transmitted to the propellers. As now constructed, turbine arrangements of Parsons' type consist generally of three units, often of four, but rarely of two; this latter arrangement having been used in one instance, so far as is at present known to the writer, except perhaps in cases where reducing gear has been interposed between the turbine and propeller shafts. With the Curtis type the prevailing practice comprises the regular twin screw system with two turbines and two shafts. Arrangements with three or four shafts with an equal number of turbines have not as yet been proposed, the reason of which may be attributed to certain inherent features in this type of turbine, rendering a twin screw arrangement more desirable. Enhanced cost and excess in weight, as well as space, over the present system would perhaps also follow. Each turbine being entirely self-contained, or, in other words, having within a single casing the parts corresponding to the high pressure and low pressure turbines, as well as reversing turbines of Parsons' system, would with a multiple shaft arrangement, properly require independent condensers, air pumps, and circulating pumps for each unit, and therefore add considerably to the number of auxiliaries. In very large installations, however, such as in the "Mauretania" and "Lusitania," where the auxiliary units on account of the extraordinary power, in any event have to be divided up, it is not probable that any great difference between the two systems as to auxiliaries would appear, other things being equal.

Principal exterior dimensions of the turbine are primarily

The first claim under the new law was filed July 17 with the newly appointed Industrial Accident Board, for an accident occurring at a manufacturing plant in Lawrence, Mass., on July 5, which resulted in the death of the injured man, Joseph Braetenas, on July 6. As the new law took effect July 1, it covered his case. Less than two weeks after the accident the case was settled by the decision that the family of the deceased should be paid \$7.33 a week for the next six years. This weekly payment is the equivalent of one-half of the average weekly earnings of the head of the family.

In this connection there is an interesting feature. Braetenas' regular weekly wage was \$13.50, but as a matter of fact he often worked overtime, earning in some instances \$19.95 per week. Therefore the definition given in the law as to the "average weekly wages" of the injured employee came into use. This defines the "average weekly wages" as "the earnings of the injured employee during the twelve-calendar months immediately preceding the date of injury, divided by 52; but if such injured employee lost more than two weeks' time during such period, then the earnings for the remainder of such twelve months shall be divided by the number of weeks remaining after the time so lost has been deducted."

It was found that Braetenas lost, during the year immediately preceding the accident, 228 5-6 hours, or 3.81 weeks. Hence Braetenas worked 48.18 weeks and his average weekly earnings under the act were \$14.66.

The first case under the new law proved to be especially interesting for the reason that it put into effect one of the most important provisions of the workingmen's compensation act—that defining the meaning of "average weekly wage." A feature, too, is the promptness with which the case was settled, demonstrating the justness of the claim of the originators and advocates of this legislation that it would do away with protracted litigation and attendant heavy charges.

influenced by the speed of revolutions partly determined by the propeller, therefore indirectly by horsepower and speed of ship. Initial steam pressure and the pressure at the condenser do, in a measure, determine the length, but are of greatest moment with respect to internal dimensions.

The following dimensions show comparatively the space occupied by a reciprocating engine and a Curtis turbine:

## Turbine 120 inches, 7-Stage, 350 r. p. m.

	feet	inches
Length over all, casing .....	16	2 3/4
Width over all, casing .....	13	6
Height over all .....	12	6
Center to center main bearings .....	18	6
Weight .....	102	tons

## Engine

32 1/2 x 53 x 61 x 61 x 48-inch stroke, 120 r. p. m.

	feet	inches
Length over all, cylinders .....	33	6 1/2
Width over all, cylinders .....	11	3
Height .....	21	9
Center to center, end bearings .....	25	3 1/2
Weight .....	153	tons

The usual pressure employed at the turbine inlet is about 265 pounds absolute, but may be any reasonable quantity within practicable limits of boiler and steam pipe construction. It must be remembered that with this type of turbine the pressures are confined initially within small nozzles, and that the casing receives the steam after it has been expanded. The vacuum should be as high as possible, 28 to 29 inches being aimed at, and the former at least is readily maintained. In this connection it is interesting to point out that a vacuum as high as 28 inches is obtained in marine turbine arrangements with an air pump capacity

less than that required for reciprocating engines running with 27 inches, and this without additional apparatus either in the form of "augmentors" or dry-vacuum pumps. The reason is plainly to be found in the steam packed glands in the turbine, therefore fewer air leaks. Condensers of large surface, together with a considerable amount of cooling water, are invariably required to adequately condense the steam. As an instance may be cited a large ocean-going turbine steamer, now running equipped with both wet and dry-air pump, maintaining a steady vacuum of  $28\frac{1}{4}$  inches, with the former alone in operation, the dry-air pump having no function except its presence. The condensers, however, are large, having about 1.6 square feet of cooling surface per equivalent indicated horsepower.

The Curtis type turbine is now well in the front as an efficient marine turbine and many recent trials have demonstrated the fact that the consumption per brake horsepower per hour is fairly constant at both low and high speeds. This result is chiefly due to the fact that the steam, being admitted by hand controlled nozzles, one or more of these can be shut off as required for reduced speed, thus eliminating the wire drawing losses which occur where the main stop valve requires to be partly closed to reduce the steam flow of shaft speed.

The Curtis turbine is of the compound impulse type, the compounding being both for pressure and velocity. In an impulse turbine, the internal energy of the steam is first changed into velocity, by expansion in a suitable nozzle, and the jet of steam directed upon the moving blades; which, in passing through the steam gives up part of its velocity to the blades, this part of the velocity being changed into mechanical work. The maximum efficiency of a single wheel impulse turbine is when the blades move with a velocity that is one-half the velocity of the jet of steam, and as steam velocities of nearly 4,000 feet per second are attained when high pressure steam is expanded into a vacuum, it is seen that for maximum efficiency the blades must move at a velocity of 2,000 feet per second. Such a speed is prohibitive for marine propulsion, and some means must be taken to reduce it. This is done by compounding the pressure drop, that is, by using several sets of nozzles, thereby reducing the drop in each set, and reducing the exit velocity of the steam accordingly; even by doing this the turbine would be too long for use if there were only one row of blades in each stage to extract the velocity from the steam. Therefore, the turbine is compounded for velocity also; that is, instead of only one row of moving blades per wheel there are several rows; each row extracts approximately twice its own velocity from the steam, and there are 2, 3 or 4 rows of moving blades used, depending on the relative velocities of the steam and the blades.

If the nozzle were placed exactly in the plane of the wheel and the blades were of such shape as to completely reverse the direction of the steam, the blades would extract twice their own velocity; this condition is not possible owing to practical reasons, the nozzles being placed at an angle with the wheel, and the blades not giving a complete reversal of direction of the steam.

The simultaneous use of pressure drops, or expansion stages, and velocity steps, or number of wheels per stage, therefore leads to a construction requiring a comparatively small total number of wheels in the Curtis turbine. The following items are therefore especially interesting with respect to the impulse type, in review with the compound reaction type:

1. For a given bucket speed and pressure range the number of vane rows is considerably less in the former than in the latter.

2. The steam expansion being executed in nozzles, ren-

ders possible the use of high initial pressure, as well as superheat, without affecting detrimentally the turbine cylinder from excessive stress, or the vane system from distortion incidental to superheat.

3. Aside from throttle valve regulation the steam supply may be varied, to suit any degree of power to be developed by the turbine, by shut-off valves on the nozzles, eliminating thereby the necessity for separate cruising turbines, as is usually arranged for in warships.

4. Large clearances are used in Curtis marine turbines at both side and end of blades, thus minimizing the danger of fouling of buckets from displacement of shaft, or vibratory influences.

5. Balance or dummy pistons, to equalize end pressure, do not exist in the impulse marine turbine, and therefore a source of loss, as well as the necessity for delicate adjustment, is eliminated.

6. For the same total power propeller diameters are larger in twin screw ships fitted with Curtis turbines than in vessels of triple or quadruple screws with Parsons'. The capacity for maneuvering is increased by using larger propellers, and by making available all of the blade area, against the two-thirds to one-half provided for in turbine ships of latter screw arrangement. Backing turbines are, however, fitted on each shaft in quadruple screw arrangements of naval ships.

The following brief extract in reference to the trials of the U. S. cruiser scout "Salem," is taken from a booklet issued by the Fore River Shipbuilding Company, Quincy, Mass., builders and manufacturers of Curtis marine turbines. We are indebted to Mr. Francis T. Bowles, president of the company, for kind permission to make extracts:

"The propulsive efficiency of the 'Salem' rose from 55 per cent at 12 knots to a maximum of 62.8 per cent at the contract speed of 24 knots, then fell, with the increase of slip, to 62.4 per cent at 25 knots, and 59.4 per cent at 26 knots. This is a remarkable result for a turbine equipment, and comes pretty near to the efficiency of the crack German liners, which have shown as high as 67 or 68 per cent. The propellers were adopted after a series of trial runs with four different designs of propellers; one by the Navy Department, another by the Denny firm, Scotland; a third by the Vulcan Works, and the fourth by the Fore River Company. The Government design broke down through excessive cavitation early in the trials. The Denny propellers showed 50 per cent efficiency at 24 knots; the Vulcan 54.04 per cent at 24 knots, and the Fore River type, which was designed by the chief engineer, Mr. C. B. Edwards, showed 62.7 per cent at 24.5 knots.

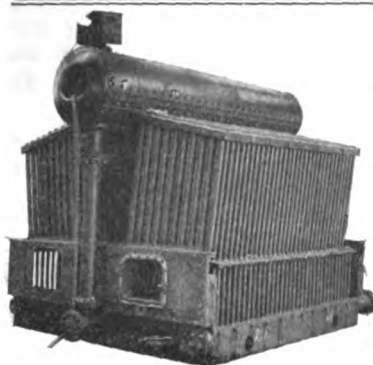
"The 'Salem' made five runs over the course, the fastest with a favorable tide of 0.8 of a knot, showing a speed of 26.88 knots per hour, and the mean of all five runs working out at 25.957 knots. The mean displacement during the runs was 3,745 tons. On the fastest run of 26.88 knots the propellers made 382.4 revolutions per minute. The steam pressure at the steam chest on the turbines was 253 pounds. The peripheral speed of the blades at the above speed was 12,000 feet per minute, and the horsepower was 20,200 or over 25 per cent more than was required by contract."

The following are the chief advantages claimed for the Curtis turbine over that of the Parsons type:

1. Due to the use of the impulse principle of the compounding by velocity stages, in addition to compounding by pressure stages the number of blades required to obtain a given economy is very much reduced, being only about one-fortieth as many.

2. The blades are made of a very much heavier section, are held in the wheels and casing in a more solid and substantial manner. This, in addition to the protection afford-

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ed by the design of the shrouding and supporting base, makes the construction so substantial that the rotating part may be moved forward or aft until actual contact occurs between the moving and stationary parts, without any damage being done. Similar treatment on the Parsons' design would result in stripping the blading.

3. The use of the impulse principle obviates the necessity of small clearance at the ends of the blades, as there is no tendency for the steam to leak around the ends. A large clearance can thus be used improving the mechanical reliability.

4. With the Curtis design, one turbine only on each shaft is necessary for economical operation at all speeds; and equal results can be obtained as with a Parsons installation using two extra cruising turbines, one high and one intermediate pressure.

5. Full steam pressure only comes on the steam chest which is a comparatively small steel casting, and the greatest pressure in the turbine shell is less than one-third the full working steam pressure. This permits the use of a high working pressure, and large turbine diameters, greatly reduces the chance of any difficulty from heat expansion. It also permits the turbine to be started very quickly from the cold condition without danger of unequal expansions causing trouble, while the Parsons turbine requires gradual warming up, and careful watching of the clearances during the process.

6. Absence of dummy pistons and their packing, eliminates the leakage of high pressure steam, and makes the economy independent of any adjustments, so that the initial economy will be maintained continuously. It also eliminates the necessity of maintaining the very fine axial adjustment, required for dummy piston packing strips, and the danger of their fouling.

7. Under given conditions the Curtis will run at lower revolutions, thus permitting twin screws to be used. This gives a higher propulsive efficiency, and makes the entire propeller area available for backing. It also greatly simplifies the entire machinery installation, especially controlling valve arrangement which gives much better maneuvering qualities.

8. Due to the simple controlling valve arrangement used with twin screws, the large clearances around blades, the absence of dummy piston packing, the substantial blade construction, and the low steam pressure in shell, as above described, it is possible to throw the turbine instantly from full ahead to full astern, with entire safety. In the Parsons design reversing must be done with considerable care to avoid damage.

9. As previously described, the Curtis turbine can obtain speed control by using either the throttle or steam-chest nozzle valves, or a combination of both, while the Parsons turbine only has the throttle. Also in twin screw installations, as used by Curtis, each turbine is independently controlled with great certainty, whilst the Parsons installations, with one turbine exhausting into another, each screw cannot be independently controlled, and actual speed of vessel cannot be so accurately known.

10. As above described the Curtis turbine can handle without damage large doses of water in the steam supply which would strip the blading of the Parsons design.

#### OFFICIAL STATEMENT OF THE CUSTOMS BUSINESS OF THE DISTRICT OF LOS ANGELES, CAL., DUR- ING THE MONTH OF JUNE, 1912

Collections .....	\$ 54,174.01
Imports .....	170,146.00
Exports .....	11,744.00

#### Imports and Exports by Countries

Belgium .....	\$ 5,414
France .....	13,080
Germany .....	11,543
Italy .....	11,888

Netherlands .....	1,210	
Norway .....	2,181	
Sweden .....	2,239	
Switzerland .....	4,918	
England .....	21,638	\$ 1,639
Scotland .....	10,751	
Ireland .....	3,116	
Canada .....	2,727	8,918
Mexico .....	26,486	75
Brazil .....	23,551	
Hongkong .....	1,797	
Japan .....	23,146	
Australia .....		1,112
Philippine Islands .....	495	
Other Countries .....	3,711	

\$170,146      \$11,744

#### Principal Imports

Wines, liquors, etc., 15,582 gals.....	\$ 21,969
Coffee, 206,563 lbs. ....	33,321
Olive Oil, 7,056 gals. ....	10,193
Lumber .....	9,907
Cheese, 29,324 lbs. ....	5,703
Wire .....	5,455
Chemicals and drugs .....	4,926
Fish .....	4,619
Seeds .....	4,035
All other articles .....	70,018

Total .....	\$170,146
Dutiable .....	\$111,935
Free of duty .....	58,211

Total .....	\$170,146
Exports to Non-Contiguous Territory of the United States	
Hawaii—	
Crude oil .....	1,344,000 gals.....\$25,600
Distillate .....	21,600 gals.....3,888
Miscellaneous .....	91
Total .....	1,365,600 gals.....\$29,579

#### Movement of Vessels in Foreign Trade

Entrance—	No.	Net tonnage
3 American .....		6,378
1 British .....		3,168
1 Norwegian .....		1,135
5 Total .....		10,681

Clearance—	No.	Net tonnage
1 American .....		2,298
1 Total .....		2,298
Number of seamen arrived.....		216
Number of seamen departed.....		34
Passengers arrived .....		18
Passengers departed .....		0

#### Movement of Vessels in Domestic Trade

Arrived and Entered—	No.	Crew	Tonnage
Steamers .....	38	3,411	70,442
Ships .....	1	16	1,748
Total .....	39	3,427	72,190
Departed and Cleared:	No.	Crew	Tonnage
Steamers .....	13	757	28,374
Ships .....	2	32	3,258
Total .....	15	789	31,632

#### TONNAGE MOVEMENT, PORT OF SAN FRANCISCO, FOR MONTH OF JULY, 1912

Compiled by S. F. Chamber of Commerce, Marine Dept.

	Arrivals		Departures	
	Tons	Tons	Tons	Tons
From—	Steam	Sail	Steam	Sail
Coast .....	339,729	34,016	338,109	39,692
British Columbia .....	17,545		35,819	
Hawaiian Island .....	28,661	976	50,839	520
Alaska .....	9,964		5,606	324
Europe .....	2,719	1,693	3,070	
China and Japan .....	55,065		35,666	
South America .....	18,872		35,262	
Philippine Island .....	7,424		7,233	
Australia .....	6,369	718		
Mexico .....	19,682		4,656	

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U. K. & Cont.				
Eastern Ports	9,176			
Pacific Islands			464	
Africa				
Australia	6,369	718	10,613	
Various	26,069			

## Receipts of Lumber for Month of July, 1912.

Coast	26,441
Interior	1,860
Oregon and Washington	58,316

## Shipments of Lumber for Month of July, 1912.

Foreign Ports	5,673
Hawaiian Islands	547

## Shipments from San Francisco for Month of July, 1912

Flour	Corn	Wheat	Barley	Oats	Rye	Beans
Lbs.	Ctls.	Ctls.	Ctls.	Ctls.	Ctls.	Ctls.
39,017	18,189	217	93,299	1,340		11,595

## COMMERCIAL MOVEMENTS AT PORTLAND

Compiled by Portland Chamber of Commerce

We publish herewith the domestic and foreign lumber shipments from Portland, the domestic and foreign shipments of grain and the principal foreign and domestic imports during the month of July, 1912.

## Lumber Exports from Portland (Foreign)

July.	Value	Since January 1, 1912.	Value
Feet		Feet	
8,756,035	\$ 91,818	57,746,631	\$ 621,505
Domestic—			
15,514,375	166,579	96,376,287	1,003,518

## Wheat Exports from Portland (Foreign)

Bushels	Value	Bushels	Value
Domestic—			
371,642	\$319,612	2,002,569	\$1,889,328

## Flour Exports from Portland (Foreign)

Barrels	Value	Barrels	Value
Domestic—			
30,350	\$136,575	220,848	958,129

## Tonnage Entered at Portland

July, 1912	83 vessels	97,727 tons
July, 1911	80 vessels	87,220 tons

## Tonnage Cleared from Portland

July, 1912	78 vessels	88,771 tons
July, 1911	81 vessels	91,911 tons

## Foreign Imports at Portland

	July	Since Jan.
Cement, barrels		12,600
Coal, tons		5,891
Coffee, sacks	3,367	6,371
Curtains and Merchandise, packages	1,820	14,015
Grain Bags, bales	2,004	3,271
Hardwood, feet	1,025,746	4,313,743
Hemp, bales	1,481	8,017
Iron, packages		6,419
Peanuts, bags	722	10,382
Provisions, packages	1,155	10,483
Rice, bags	460	9,174
Sugar, bags	70	645
Sulphur, tons	712	4,494
Tapioca, bags	240	1,535
Tea, packages	340	1,252

## Domestic Imports at Portland by Water

	July	Since Jan.
Asphaltum, barrels	11,110	56,537
Butter, cases	3,998	9,789
Canned Goods, cases	12,621	73,160
Cement, sacks	226,473	1,798,823
Coffee, sacks	1,486	5,485
Electrical Goods, packages	1,853	9,265
Grain Bags, bales	768	1,548
Hardware, tons	2,418	15,371
Iron, packages	9,557	69,795
Leather and Hides, rolls	604	3,100
Machinery, packages	729	3,062
Merchandise, tons	5,139	23,158

Miscellaneous, packages	36,594	256,747
Oil, barrels	281,146	2,572,603
Paints and Oils, packages	9,148	54,810
Plaster, sacks	10,444	64,051
Salt, sacks	31,218	179,465
Sash and Doors, packages		2,567
Sugar, sacks	64,732	318,190
Sulphur, sacks	40	11,039
Tobacco, packages	798	11,099
Wool, bales	456	1,554

## COASTWISE AND FOREIGN COMMERCE OF TACOMA, WASH., MONTH OF JUNE, 1912

## Foreign shipments—

Articles	Quality	Value
Flour, bbls.	53,153	\$ 217,254
Wheat, bu.	12,168	11,627
Oats, tons	179	7,184
Cotton, raw, bales	4,583	258,893
Tobacco, lbs.	67,884	9,146
Coal, sacked, tons	200	8,610
Machinery, pkgs.	1,578	87,674
Acetate of Lime, sacks	1,688	6,400
Lumber, feet	1,732,152	36,757
Baled hay, tons	1,180	22,424
Canned meats, cases	1,336	4,720
Domestic and sheeting, bales	1,545	75,773
Box shooks, bbls.	2,197	1,101
Paraffin wax, box	2,000	8,610
Steel rails, tons	195	20,909
Autos	69	90,702
Sewing machines, crates	7,538	79,841
Copper bars	1,644	33,647
Miscellaneous to British Columbia		27,200
Miscellaneous to Japan, China, Manila, So. America and Europe		271,689

## Total foreign shipments

\$1,331,071

## Coastwise shipments—

Flour, bbls.	36,253	157,981
Lumber, feet	9,205,960	99,206
Coal, tons	5,790	34,740
Wheat, bu.	114,977	115,032
Oats, tons	69	2,466
Bullion, furnace products		211,187
Box shooks, bbls.	21,058	10,598
Lime, bbls.	180	262
Feed, tons	1,101	28,666
Hay, tons	368	5,504
Milk, condensed, cases	300	1,785
Beer, bbls.	2,930	19,678
Shoes, cases	10	3,125
Miscellaneous to Alaska		43,257
Mis. to Cal., Honolulu and N. Y.		32,515

## Total coast wise shipments

\$ 766,002

## Total foreign shipments

1,331,071

## Total shipments

\$ 2,897,073

## Previously reported

19,008,692

## Grand total exports for 6 mos., 1912

\$21,105,765

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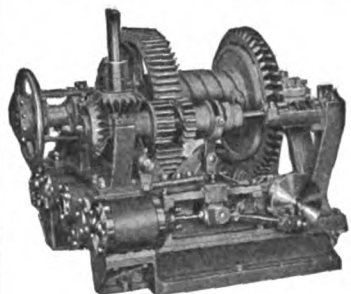
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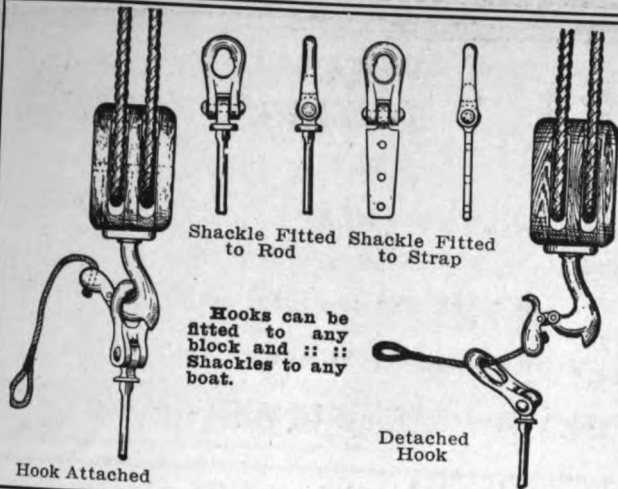
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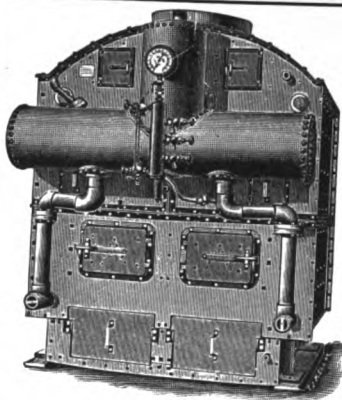
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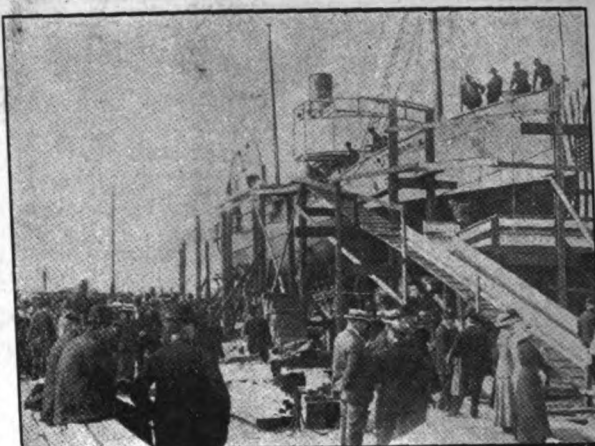
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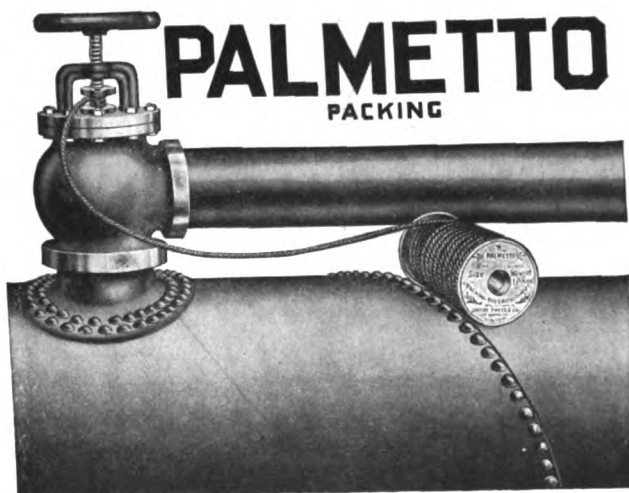
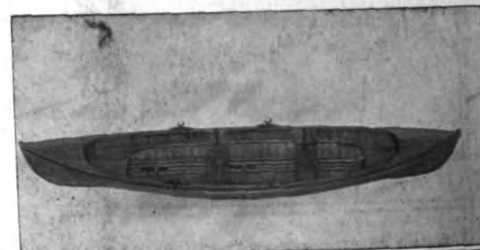
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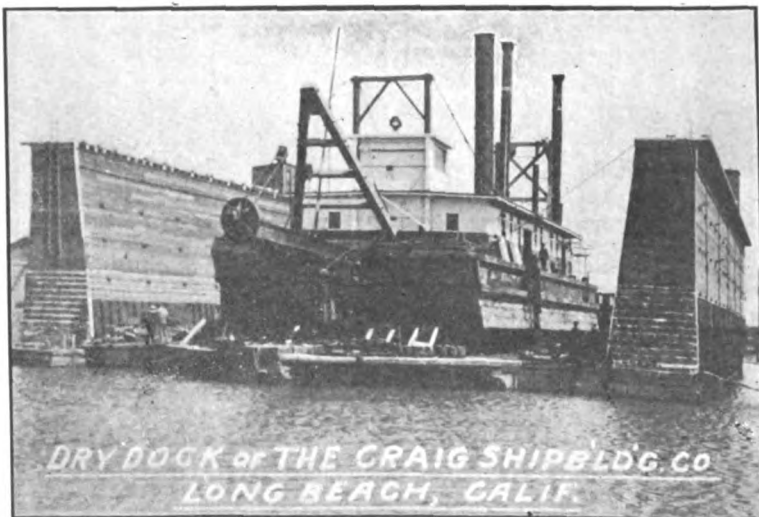
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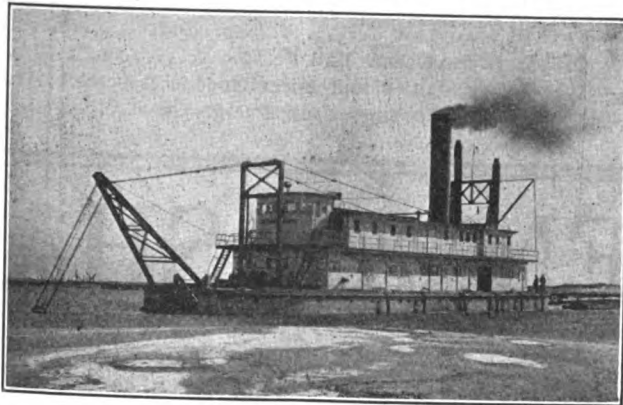
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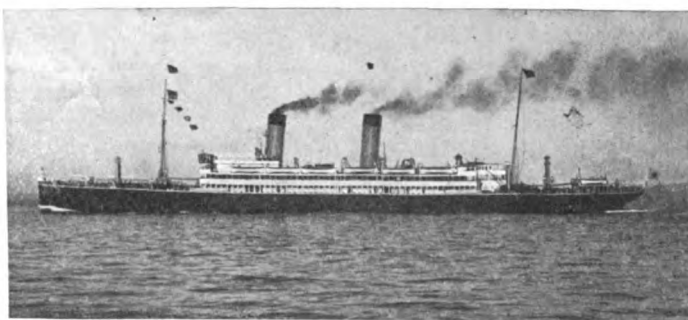
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(Copyright September, 1912, by Pacific Marine Review)

VOL. IX

SEATTLE, WASH., U. S. A., SEPTEMBER, 1912

No. 9

## PROGRESSIVE PROGRAMME

BY H. B. JAYNE

Memorandum From Col. Roosevelt's Secretary, Mr. Frank Harper

WHILE personally I do not support, though in many respects admire Colonel Roosevelt, particularly for the plucky fight he is making against enormous odds, including tradition and the fetish of party politics, I feel that it is the duty of the Pacific Marine Review, which has already published and discussed the Republican and Democratic programmes, to give some consideration to Colonel Roosevelt and the Progressive party.

Accordingly I recently addressed a letter to Colonel Roosevelt and received the subjoined from his secretary, Mr. Frank Harper, which I understand was personally revised by the illustrious candidate.

In further explanation, it is only necessary to add that I objected to what I have always considered the destructive rather than the constructive statesmanship of Colonel Roosevelt, and also asked him to declare his attitude in regard to Alaskan and other legislation directly concerning the Pacific coast, regretting that apparently both the Republican and Democratic parties would not commit themselves beyond "evasive statements," against which the West properly rebelled.

Finally, appreciating that Colonel Roosevelt has an extraordinary personality, a dominating element in his campaign, and that he cannot possibly accede to all requests to address public meetings, I suggested that he deliver a few sensible, decisive and brief speeches, suitable to different states, to phonograph records and transmit such records to meetings he cannot attend.

I repeat, I personally do not support Colonel Roosevelt, but I wish the Pacific Marine Review to give him and his party fair consideration, and I take this opportunity to invite some of its readers to express their views as to the three presidential candidates and the party and policy each represents.

The Outlook, 287 Fourth Avenue, New York,  
Office of Theodore Roosevelt,

August 22nd, 1912.

My Dear Sir: Mr. Roosevelt is very sorry, but at the present time he is so overwhelmed with work of various kinds that it is a physical impossibility for him to arrange to see all the friends he would like to see. He has therefore asked me to express his regret that he is unable to make the appointment to see you at the present time.

In your letter to Mr. Roosevelt you said that he wishes to "destroy the Standard Oil Company," and then you add that he "must remember that it has become such a national and international factor and performs so many important functions that it must be replaced before it is actually destroyed, either by public ownership or something else, and that the same is true of other large combinations, such as the Steel Trust, etc." This is something which Mr. Roosevelt understands very well, and I am sure if you would only read what he has written as to his plans for the constructive control of the trusts, that you would be thoroughly in accord with his views. In his speech at the Chicago convention of the National Progressive party he said that the tendency of those now in control of the

Republican party is to give special privileges to big business and to correct the evils of such a course, when they become crying, by sporadic lawsuits under the anti-trust law. He added that the tendency of the Democrats, judged by their record in Congress and by the Democratic platform, is to abolish business of any size or efficiency on the ground that all bigness is badness, and littleness a weakness, a sign of virtue. Then in one sentence he states his position: "What is needed is action directly the reverse of what these confusedly indicate," and he adds that there should be applied to all industrial concerns engaged in interstate commerce, in which there is either monopoly or control of the market, the principles already adopted in regulating transportation concerns engaged in such commerce. Mr. Roosevelt is of opinion that the anti-trust law should be kept on the statute book to be invoked against every big concern tending to monopoly, or guilty of anti-social practices, while at the same time a national industrial commission should be created which would have complete power to regulate and control all the great industrial concerns engaged in interstate business. You will thus see that Mr. Roosevelt's position is not one of destruction, not one to destroy the Standard Oil Company and other trusts, but to control them.

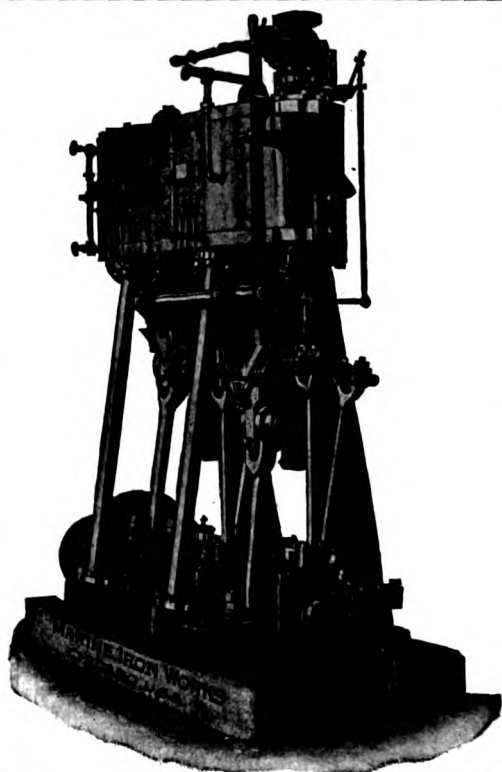
That is a very good suggestion which you make regarding making a few brief and decisive speeches and speaking them into a phonograph. This matter has already had very careful consideration, although I believe the decision up to the present has been adverse.

Again, as to what you say regarding the Pacific coast requiring definite declarations, and not evasive statements. As a matter of fact, Mr. Roosevelt is the only candidate who has made such definite declarations and has not evaded the issue. He was the first of the candidates to speak out in favor of free tolls for coastwise traffic through the Panama canal; he was the first candidate to suggest a national scheme for the canalization of the Mississippi, the Panama canal to be the central link in the development of a system of natural arteries on this continent. The Progressive party adopted these ideas and made a specific demand "that the canal shall be so operated as to break the transportation monopoly now held and misused by the transcontinental railroads by maintaining sea competition with them; that ships directly or indirectly owned or controlled by American railroad corporations shall not be permitted to use the canal, and that American ships engaged in coastwise trade shall pay no tolls."

As regards Alaska, he also put forward a scheme for using the machinery and the men which will shortly be available from Panama for the construction of a railroad in Alaska, and the Progressive party platform demands "that extortion or monopoly shall be prevented by the prompt acquisition, construction or improvement by the government of such railroads, harbor and other facilities for the transportation as the welfare of the people may demand."

I could go on and tell you dozens of specific and definite





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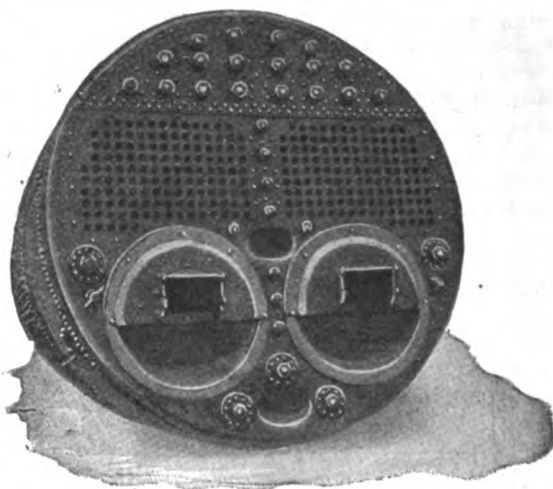
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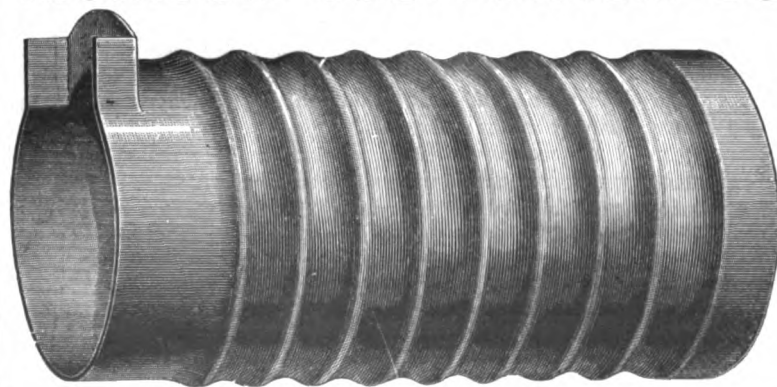
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declarations, none of them evasive, and all of them very outspoken, but I would rather have you read the platform for yourself. Having read the complete platform, then you may judge for yourself of the actions of the men who put through that platform by their deeds in office in whatever offices they have held, as to whether they would keep those promises. Mr. Roosevelt regards his platform as a contract

with the people, and he hopes the people will enter into that contract with him next November, and then he will do his utmost to fulfill every promise made in the platform.

Faithfully yours,

FRANK HARPER, Secretary.

H. B. Jayne, Esq.

## CONGRESSMAN HUMPHREY ON THE PANAMA CANAL

THE PACIFIC MARINE REVIEW wishes to be included amongst those who have welcomed Congressman W. E. Humphrey home and who realize his untiring work and efforts. We have been in almost constant correspondence with this highly esteemed and efficient member of the House of Representatives during the last session of Congress, in which he so vigorously and brilliantly served this district, and appreciate the many courtesies Mr. Humphrey has extended to the Pacific Marine Review.

We take particular pride in reproducing part of the speech which Congressman Humphrey delivered on August 30th during a banquet extended to him by some of Seattle's foremost citizens. The address rings true of his capacity, quality and efficiency as a legislator:

"I return to Seattle proud of this city, proud of its past history and with absolute confidence in its splendid future. The city of Seattle, in my judgment, is just on the threshold of a greater growth and a greater development than ever before.

"Within the next few months we will have completed the Panama canal. What will this event mean to Seattle? Much depends upon what we do to take advantage of it. The first great fight has been won, that of free tolls for American ships in the coastwise trade. But for that victory this city and this state would have been far better off without a canal. Without that advantage, the value of the canal would have gone almost entirely to British Columbia, and Vancouver would have become the great seaport of the North Pacific. Without that advantage foreign ships with their cheap crews and cheap charters could have carried the lumber, the fish and the other products to the great markets of our Eastern cities at a rate that we on Puget Sound could not possibly meet. I considered the question of a free canal for American ships a life-and-death struggle for this community commercially. It was to this fight that I have devoted much of my time for the last year, and I am proud to say that, justly or unjustly, I have been given the credit for having something to do with defeating the report of the committee that was against giving any advantage whatever to American ships.

"I have never been one of that class that is against railroads simply because they are railroads. I have never been one of those that have cried out against corporations. But I do not hesitate to say here tonight, as I said upon the floor of Congress, that the fight for a free canal for American ships was a fight of the railroads against the people. I think it was a shortsighted policy on the part of the railways. I do not believe it will injure them.

"Of course, a free canal means the reduction of freight rates. This fact is the heart of the whole controversy. Of course, this was the secret of the railroad opposition. But for the action of the great interests the canal would have been free to every ship flying the American flag. I do not believe that the American people will ever be content until this is done.

"I notice that England is now talking of having this question submitted to The Hague for arbitration. So far as what little influence I may have is concerned, I will use

it always in every way possible against any such proposition. The Panama canal is part of our coast line. It is built upon American territory. The American people own it. They have constructed it; they have paid for it. The American people, in my judgment, will never for a moment consent to arbitrate any question relative to the Panama canal.

"What are we doing to be ready for the opening of the canal, and what is necessary? A survey for Seattle harbor is contained in the present rivers and harbors bill. We have already done much to improve our harbor, and we will do more, and the government should help us, and I believe it will to the extent that our commerce requires. But there is a matter of far more importance, in my judgment, than even the improvement of our harbor, important as it is, and I assure you that I do not underestimate it, if we are to get the benefit to which we are entitled from the construction of the Panama canal, and this is to amend our tariff laws and our immigration laws so that the traffic coming into this country by the way of the Pacific ocean shall enter by an American port instead of a British Columbia port.

"There is another question of still more vital importance. There is a constant inclination on the part of Congress to impose greater burdens not only upon our own vessels, but upon foreign vessels that come into our ports than are imposed by the Canadian government. If I can judge of the situation, nothing can prevent Congress from continuing to pass legislation of this character. As our tariff law stands today, a foreign ship can load at New York, Philadelphia or any other of the Eastern ports, bring her cargo to Vancouver and send it into any part of the United States without payment of any duty whatever. We know that the Great Northern and the Northern Pacific already have their terminals at Vancouver. It is probable that the other transcontinental railroads soon will have. In other words, there will be no advantage to any foreign ship to come to Seattle or other Puget Sound ports. Of course, foreign ships coming from New York or any other American port would be forbidden to discharge their cargo at another American port. Unless our tariff law is changed in this regard and we change our policy towards shipping, I look for Puget Sound to cease to be a great shipping district and the business that should be done would be transferred to British Columbia."

### THE PANAMA CANAL ACT

(H. R. 21969.) An Act to provide for the opening, maintenance, protection and operation of the Panama Canal, and the sanitation and government of the Canal Zone.

In the following we publish the essential sections of the widely discussed Panama Canal Act, as approved August 24th, 1912.—Ed. note.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the zone of land and land under water of the width of ten miles extending to the distance of five miles on each side of the center line of the route of the canal now being constructed thereon, which zone begins in the Caribbean Sea three marine miles from mean low-water mark and extends to and across the Isthmus of Panama into the Pacific Ocean to the distance of three marine miles from mean low-water mark, excluding therefrom

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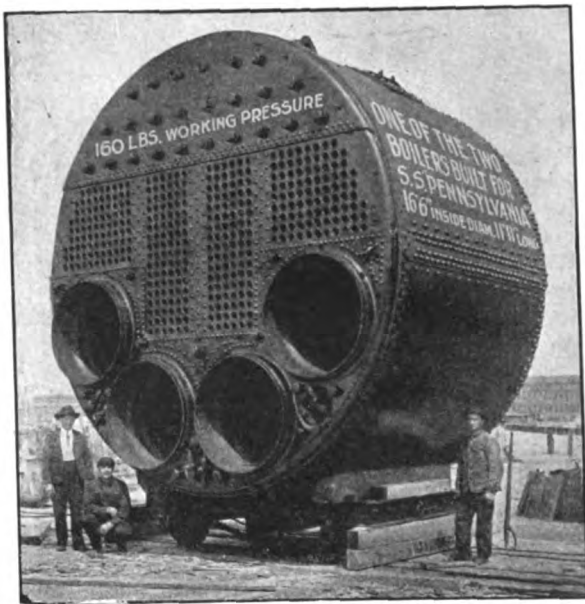
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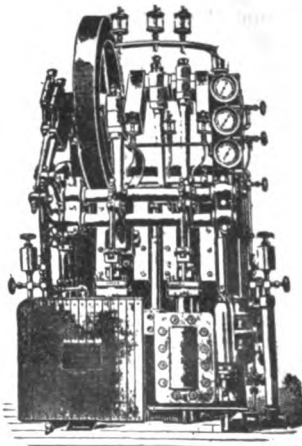
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the cities of Panama and Colon and their adjacent harbors located within said zone, as excepted in the treaty with the Republic of Panama dated Nov. 18, nineteen hundred and three, but including all islands within said described zone, and in addition thereto the group of islands in the Bay of Panama named Perico, Naos, Culebra, and Flamenco, and any lands and waters outside of said limits above described which are necessary or convenient or from time to time may become necessary or convenient for the construction, maintenance, operation, sanitation, or protection of the said canal or of any auxiliary canals, lakes, or other works necessary or convenient for the construction, maintenance, operation, sanitation, or protection of said canal, the use, occupancy, or control whereof were granted to the United States by the treaty between the United States and the Republic of Panama, the ratifications of which were exchanged on the twenty-sixth day of February, nineteen hundred and four, shall be known and designated as the Canal Zone, and the canal now being constructed thereon shall hereafter be known and designated as the Panama Canal. The president is authorized, by treaty with the Republic of Panama, to acquire any additional land or land under water not already granted, or which was excepted from the grant, that he may deem necessary for the operation, maintenance, sanitation, or protection of the Panama Canal, and to exchange any land or land under water not deemed necessary for such purposes for other land or land under water which may be deemed necessary for such purposes, which additional land or land under water so acquired shall become part of the Canal Zone.

Sec. 2. That all laws, orders, regulations, and ordinances adopted and promulgated in the Canal Zone by order of the president for the government and sanitation of the Canal Zone and the construction of the Panama Canal are hereby ratified and confirmed as valid and binding until Congress shall otherwise provide. The existing courts established in the Canal Zone by executive order are recognized and confirmed to continue in operation until the courts provided for in this Act shall be established.

Sec. 3. That the president is authorized to declare by executive order that all land and land under water within the limits of the Canal Zone is necessary for the construction, maintenance, operation, sanitation, or protection of the Panama Canal, and to extinguish, by agreement when advisable, all claims and title of adverse claimants and occupants. Upon failure to secure by agreement title to any such parcel of land or land under water the adverse claim or occupancy shall be disposed of and title thereto secured in the United States and compensation therefor fixed and paid in the manner provided in the aforesaid treaty with the Republic of Panama, or such modification of such treaty as may hereafter be made.

#### Administration

Sec. 4. That when in the judgment of the President the construction of the Panama Canal shall be sufficiently advanced toward completion to render the further services of the Isthmian Canal Commission unnecessary the President is authorized by executive order to discontinue the Isthmian Canal Commission, which, together with the present organization, shall then cease to exist; and the President is authorized thereafter to complete, govern, and operate the Panama Canal and govern the Canal Zone, or cause them to be completed, governed, and operated, through a governor of the Panama Canal and such other persons as he may deem competent to discharge the various duties connected with the completion, care, maintenance, sanitation, operation, government and protection of the canal and Canal Zone. If any of the persons appointed or employed as aforesaid shall be persons in the military or naval service of the United States, the amount of the official salary paid to any such person shall be deducted from the amount of salary or compensation provided by or which shall be fixed under the terms of this act. The governor of the Panama Canal shall be appointed by the President, by and with the advice and consent of the Senate, commissioned for a term of four years, and until his successor shall be appointed and qualified. He shall receive a salary of \$10,000 a year. All other persons necessary for the completion, care, management, maintenance, sanitation, government, operation and protection of the Panama Canal and Canal Zone shall be appointed by the President, or by his authority, removable at his pleasure, and the compensation of such persons shall be fixed by the President, or by his authority, until such time as Congress may by law regulate the same, but salaries or compensation fixed hereunder by the President

shall in no instance exceed by more than 25 per centum the salary or compensation paid for the same or similar services to persons employed by the Government in continental United States. That upon the completion of the Panama Canal the President shall cause the same to be officially and formally opened for use and operation.

Sec. 5. That the President is hereby authorized to prescribe and from time to time change the tolls that shall be levied by the Government of the United States for the use of the Panama Canal: Provided, that no tolls, when prescribed as above, shall be changed, unless six months' notice thereof shall have been given by the President by proclamation. No tolls shall be levied upon vessels engaged in the coastwise trade of the United States. That section 4132 of the Revised Statutes is hereby amended to read as follows:

#### Admission of Vessels to United States Register

"Sec. 4132. Vessels built within the United States and belonging wholly to citizens thereof; and vessels which may be captured in war by citizens of the United States and lawfully condemned as prize, or which may be adjudged to be forfeited for a breach of the laws of the United States; and seagoing vessels, whether steam or sail, which have been certified by the Steamboat Inspection Service as safe to carry dry and perishable cargo, not more than five years old at the time they apply for registry, wherever built, which are to engage only in trade with foreign countries or with the Philippine Islands and the islands of Guam and Tutuila, being wholly owned by citizens of the United States or corporations organized and chartered under the laws of the United States or any State thereof, the president and managing directors of which shall be citizens of the United States or corporations organized and chartered under the laws of the United States or of any State thereof, the president and managing directors of which shall be citizens of the United States, and no others, may be registered as directed in this title. Foreign-built vessels registered pursuant to this act shall not engage in the coastwise trade: Provided, that a foreign-built yacht, pleasure boat, or vessel not used or intended to be used for trade admitted to American registry pursuant to this section shall not be exempt from the collection of ad valorem duty provided in section 37 of the act approved August 5, 1909, entitled 'An act to provide revenue, equalize duties and encourage the industries of the United States, and for other purposes.' That all materials of foreign production which may be necessary for the construction or repair of vessels built in the United States and all such materials necessary for the building or repair of their machinery and all articles necessary for their outfit and equipment may be imported into the United States free of duty under such regulations as the Secretary of the Treasury may prescribe; Provided further, that such vessels so admitted under the provisions of this section may contract with the Postmaster General under the act of March 3, 1891, entitled 'An act to provide for ocean mail service between the United States and foreign ports, and to promote commerce,' so long as such vessels shall in all respects comply with the provisions and requirements of said act."

#### Regulation of Tolls

Tolls may be based upon gross or net registered tonnage, displacement tonnage, or otherwise, and may be based on one form of tonnage for warships and another for ships of commerce. The rate of tolls may be lower upon vessels in ballast than upon vessels carrying passengers or cargo. When based upon net registered tonnage for ships of commerce the tolls shall not exceed \$1.25 per net registered ton, nor be less, other than for vessels of the United States and its citizens, than the estimated proportionate cost of the actual maintenance and operation of the canal, subject, however, to the provisions of article 19 of the convention between the United States and the Republic of Panama, entered into November 18, 1903. If the tolls shall not be based upon net registered tonnage, they shall not exceed the equivalent of \$1.25 per net registered ton as nearly as the same may be determined, nor be less than the equivalent of 75 cents per net registered ton. The toll for each passenger shall not be more than \$1.50. The President is authorized to make and from time to time amend regulations governing the operation of the Panama Canal, and the passage and control of vessels through the same or any part thereof, including the locks and approaches thereto, and all rules and regulations affecting pilots and pilotage in the canal or the approaches thereto through the adjacent waters.

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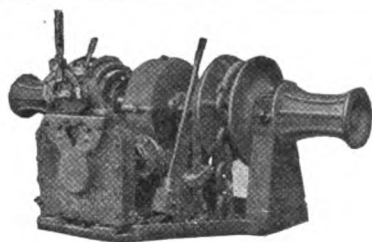
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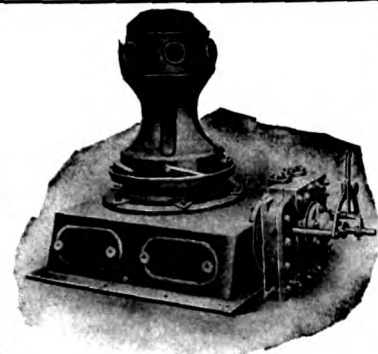
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ages which may arise from injury to vessels, cargo or passengers from the passing of vessels through the locks under the control of those operating them under such rules and regulations. In case of disagreement suit may be brought in the district court of the Canal Zone against the governor of the Panama Canal. The hearing and disposition of such cases shall be expedited and the judgment shall be immediately paid out of any moneys appropriated or allotted for canal operation.

#### Radio-Communications

Sec. 6. That the President is authorized to cause to be erected, maintained and operated, subject to the International Convention and the act of Congress to regulate radio-communication, at suitable places along the Panama Canal and the coast adjacent to its two terminals, in connection with the operation of said canal, such wireless telegraphic installations as he may deem necessary for the operation, maintenance, sanitation and protection of said canal, and for other purposes. The President is also authorized to establish, maintain and operate, through the Panama Railroad Company or otherwise, dry docks, repair shops, yards, docks, wharves, warehouses, storehouses and other necessary facilities and appurtenances for the purpose of providing coal and other materials, labor, repairs and supplies for vessels of the Government of the United States and, incidentally, for supplying such at reasonable prices to passing vessels, in accordance with appropriations hereby authorized to be made from time to time by Congress as a part of the maintenance and operation of the said canal.

#### Prohibition of Railroad Owned Lines

Sec. 11. That section 5 of the act to regulate commerce, approved February 4, 1887, as heretofore amended, is hereby amended by adding thereto a new paragraph at the end thereof, as follows:

"From and after the 1st day of July, 1914, it shall be unlawful for any railroad company or other common carrier subject to the act to regulate commerce to own, lease, operate, control, or have any interest whatsoever (by stock ownership or otherwise, either directly, indirectly, through any holding company, or by stockholders or directors in common, or in any other manner) in any common carrier by water operated through the Panama Canal or elsewhere with which said railroad or other carrier aforesaid does or may compete for traffic, or any vessel carrying freight or passengers upon said water route or elsewhere with which said railroad or other carrier aforesaid does or may compete for traffic; and in case of the violation of this provision each day in which such violation continues shall be deemed a separate offense."

#### Jurisdiction of Interstate Commerce Commission

Jurisdiction is hereby conferred on the Interstate Commerce Commission to determine questions of fact as to the competition or possibility of competition, after full hearing, on the application of any railroad company or other carrier. Such application may be filed for the purpose of determining whether any existing service is in violation of this section and pray for an order permitting the continuance of any vessel or vessels already in operation, or for the purpose of asking an order to install new ser-

vice not in conflict with the provisions of this paragraph. The commission may on its own motion or the application of any shipper institute proceedings to inquire into the operation of any vessel in use by any railroad or other carrier which has not applied to the commission and had the question of competition or the possibility of competition determined as herein provided. In all such cases the order of said commission shall be final.

If the Interstate Commerce Commission shall be of the opinion that any such existing specified service by water other than through the Panama Canal is being operated in the interest of the public and is of advantage to the convenience and commerce of the people, and that such extension will neither exclude, prevent, nor reduce competition on the route by water under consideration, the Interstate Commerce Commission may, by order, extend the time during which such service by water may continue to be operated beyond July 1, 1914. In every case of such extension the rates, schedules and practices of such water carrier shall be filed with the Interstate Commerce Commission and shall be subject to the act to regulate commerce and all amendments thereto in the same manner and to the same extent as is the railroad or other common carrier controlling such water carrier or interested in any manner in its operation: Provided, any application for extension under the terms of this provision filed with the Interstate Commerce Commission prior to July 1, 1914, but for any reason not heard and disposed of before said date, may be considered and granted thereafter.

No vessel permitted to engage in the coastwise or foreign trade of the United States shall be permitted to enter or pass through said canal if such ship is owned, chartered, operated or controlled by any person or company which is doing business in violation of the provisions of the act of Congress approved July 2, 1890, entitled "An act to protect trade and commerce against unlawful restraints and monopolies," or the provisions of sections 73 to 77, both inclusive, of an act approved August 27, 1894, entitled "An act to reduce taxation, to provide revenue for the Government, and for other purposes," or the provisions of any other act of Congress amending or supplementing the said act of July 2, 1890, commonly known as the Sherman Anti-Trust act, and amendments thereto, or said sections of the act of August 27, 1894. The question of fact may be determined by the judgment of any court of the United States of competent jurisdiction in any cause pending before it to which the owners or operators of such ship are parties. Suit may be brought by any shipper or by the Attorney General of the United States.

(Section 6 of said act to regulate commerce, as heretofore amended, was amended by adding a new paragraph at the end thereof, which was published in the Pacific Marine Review's August issue, where quotations were made from this act.—Ed. Note.)

Sec. 14. That this act shall be known as, and referred to as, the Panama Canal Act, and the right to alter, amend or repeal any or all of its provisions, or to extend, modify or annul any rule or regulation made under its authority is expressly reserved.

Approved, August 24, 1912.

## ALASKA THE WONDERLAND OF THE WORLD

Speech of the Hon. Wm. Sulzer of New York

In the subjoined we quote in part from Mr. Sulzer's eloquent, just and equitable speech made in the House April 17, 1912, having under consideration the bill, H. R. 13987, to create a legislature in the Territory of Alaska, to confer legislative power thereon, and for other purposes, in which the Pacific Marine Review is keenly interested, and particularly so relative to transportation facilities and more safeguards to navigation so forcibly brought out in this splendid address.—Ed. Note.

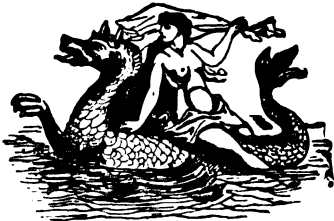
"In the coast region of Southeastern Alaska mining for gold, copper and silver has been going on for a number of years. The development of this industry has been especially rapid since 1898, and it promises to become one of the most important mining districts of the country. The discovery of vast copper deposits in Alaska was made only a few years ago. Copper mining is now being done in several districts, and many tons of copper ore are being

shipped weekly to the smelters. The investigations of the past two years have shown, however, that there are unquestionably vast and undeveloped copper deposits in many other districts of Alaska. The coal of Alaska embraces lignites, bituminous and anthracite. Coal has been found in nearly every part of Alaska, both on the coast and in the interior. The coal is so widely distributed that it must be regarded as one of its most important resources. It is a conservative estimate to place the area occupied by the coal-bearing rocks at 30,000 square miles. Accurate statements cannot be made as to the figures of the fish industry for the year 1911, but it can be said that it has been continually growing and is still in its infancy. More than 30 varieties of food fish inhabit the Alaskan waters. The output of salmon now amounts to more than \$15,000,000 a year. Alaska can feed the fish-eating people of the world.

Considering the resources and the vast possibilities of Alaska—and all of these statements can be proved by records on file in the various departments of the govern-

# Woolsey's Copper "BEST" Paint

THE WORLD'S STANDARD FOR THE PRESERVATION OF WOOD UNDER WATER



Trade Mark

Woolsey's Copper BEST Paint is sold in every country for use on the bottoms of wood vessels and boats of all kinds.

In Japan and other countries our labels have been imitated and put on home production of paints, which is the best testimonial we can give as to its merits and efficiency.

About every paint manufacturer in this country at some time has made and put on the market a Copper paint, but so far practically all, or nearly all of them, without any satisfactory results, and WOOLSEY'S COPPER "BEST" Paint continues to take the lead. It does just what the manufacturers claim for it and the price is kept at a minimum in comparison with cost.

Woolsey's Copper Paints are sold at a lower price on the Pacific coast than in any other place in the world, for the reason that we have no traveling men to pay in that territory and the amount saved in this way is deducted from our selling price and the consumers get the benefit.

With these facts in view, there should be no inducement for vessel owners to experiment with unknown compounds and taking a chance of having their vessel's bottoms eaten and destroyed by the Tereido worm and coated with barnacles, sea grass, etc.

**C. A. WOOLSEY PAINT & COLOR COMPANY, JERSEY CITY, N. J.**

Any application of  
**Avenarius Carbolineum**  
 is a Means of Reducing Maintenance Expense  
**Avenarius Carbolineum Treated Wood-Block**  
**Pavements are laid with a Free Ten-**  
**Year Maintenance Agreement**

*Avenarius*  
**CARBOLINEUM**  
 REGISTERED

310 Crary Bldg, Seattle  
 Balfour-Guthrie Co., Agents,  
 Vancouver, B. C.

ment—considering, I say, what is absolutely known, and which cannot be successfully controverted, I stand here as a representative of the people on the floor of the American Congress and ask why Alaskans should not have the right to govern themselves? Why they should not have home rule? Why they should not have a territorial government. I pause for a reply in the negative.

No true American can deny Alaska home rule. No patriotic citizen will object to the Alaskans having a local legislature and the right to make their own local laws. Under the terms of this territorial bill each of the four divisions will have two representatives in the senate elected by the people, and four representatives in the assembly elected by the people, and the cost of this local self-government will be so infinitesimal in comparison to the great wealth that Alaska is pouring into the American treasury that we shall hereafter wonder why Alaska was denied for so long local self-government.

Mr. Chairman, in addition to territorial government Alaska needs two other very important things. One is—better lighthouse service—more navigation lights. We do nothing like as much for our vast territory of Alaska as the Canadian government does for British Columbia. From Cape Chacon, Alaska, down to the State of Washington is all Canadian territory, called British Columbia. Along this coast is the inside passage, going to and coming from Alaska. All the ships from Puget Sound that go to South-eastern Alaska and many of the vessels that go to South-western Alaska take this inside passage, and for scenic beauty, for recreation, for health and for pleasure it is the grandest waterway on all this earth.

The inside passage through Norway to the North Cape and the inside passage through the Straits of Magellan combined are not as grand and as beautiful as the inside passage from Puget Sound to the head of the Lynn Canal, a distance on water as calm as a mill pond for more than a thousand miles. People who have traveled all over the world, who have seen all the wonders of nature, hold their breath in silent admiration when they see the scenic wonders of the inside passage to Alaska. As a panorama

of changing scenes of grandeur it is glorious beyond description. Thousands and thousands of tourists make this trip every summer. Yet our government is derelict in that it does not furnish for Alaska proper lights and light-houses to safeguard navigation and protect life and commerce along our Alaskan shores. Every year there are two or three wrecks; every year there are lives lost, and all for want of navigation safeguards.

We are standing today in the shadow of one of the greatest marine disasters in all history. The tragedy of the "Titanic" appalls us. We are speechless in the presence of this awful catastrophe. More than a thousand lives went down into the depths of the sea with hardly a moment's warning when the "Titanic" struck. The horror of it all is indescribable. The people of the world mourn.

But every ship that makes this trip through the inside passage to and from Alaska is loaded with human freight, tourists, health seekers, pleasure seekers, our friends, our relatives and our neighbors, and for lack of proper safeguards is liable to strike a hidden rock, or run upon an iceberg, or collide with a sister ship in the fog. It is criminal for the government to neglect longer the installation of proper lights on the Alaskan coast.

Alaska has a tremendous coast line. The coast line of the United States on the Atlantic, on the Gulf and on the Pacific is a little less than 8,000 miles. Our coast line in Alaska, from Cape Chacon around to Herschel Island in the Arctic Ocean, is over 20,000 miles. Yet for thousands of miles of that bleak and dangerous coast we have not a light nor a safeguard to navigation. This is a crying need, and I hope the committee on appropriations will heed the insistent demands of the lighthouse board and make substantial appropriations in the future to give Alaska better lights along her coasts.

Mr. Chairman, another important thing the people of Alaska need is better transportation facilities. How shall our people settle in Alaska when they cannot get around on land in that vast territory? It is almost as difficult for people to travel in Alaska without transportation facilities as it is to journey on the Atlantic Ocean without a boat.

Give Alaska decent transportation and you will find that our people in the United States will not be selling their farms in Iowa, in Minnesota and in the Dakotas and taking their families, their money and their possessions and going to Canada. They will go to Alaska. But they cannot get around there now, because Alaska has very little transportation except water transportation. We have no transportation in Southwestern Alaska save one railroad running from Cordova up to a copper mine. Alaska wants more dirt roads and more railroads through this great country.

Take Resurrection Bay, in Southwestern Alaska—one of the great harbors of the world. All the fleets of the Pacific can ride safely at anchor in this magnificent bay and be invulnerable to attack. It is the greatest natural harbor we own in the North Pacific.

If anything should happen to our North Pacific fleet it would have no port to make nearer than San Francisco, or Pearl Harbor, in the Hawaiian Islands. The fleet could not succeed in getting through the Straits of Juan de Fuca. Resurrection Bay is 1,800 miles nearer the Orient than either San Francisco or Puget Sound, and it is best place in the North Pacific for this government to have a naval base and a harbor of safety in case of emergency on the North Pacific Ocean.

The people of the United States, for their own welfare, should build a railroad from Resurrection Bay to the interior of Alaska to open the Tanana valley, the Susitna valley and the wonderful Kuskokwim valley. Then the people who leave our country to better their condition will go to Alaska and settle there. They will go up there and cultivate the ground and till the soil. They will develop the agricultural resources of the country. They will take advantage of the cattle ranges and produce enough meat to supply the wants of our people. They will produce mineral wealth beyond the dreams of avarice. A government railroad from Resurrection Bay to the Yukon, opening up these wonderful valleys, would also develop the greatest coal deposits on this continent—the Matanuska coal fields.

Here are millions of acres of the finest anthracite coal on earth, and of the best bituminous coal in the world. The government could pay the expenses of operating the railroad every year by mining its own coal for the use of the Pacific fleet.

The United States buys its coal at Newport News and transports it all the way around South America. It transports that coal in foreign ships, flying foreign flags, and manned by foreign seamen. Every year the government pays for the coal for its Pacific fleet and the revenue cutter service on the Pacific coast a sum of money amounting to millions of dollars. If that money was utilized to build this railroad it would pay a profit to the government the first day it was in operation, and in ten years would pay the government back every dollar it will cost, and be one of the quickest agencies to help the people open up this wonderful country of Alaska.

We ought to do something for Alaska. It is a shame the way Congress treats Alaska. It is un-American, undemocratic and unrepugnant. It is a violation of the fundamental principles of American citizenship. I cry out against governing Alaska like a conquered province. I have done all I could for Alaska since I have been a member of Congress, and I shall keep up the fight for the right until the people of Alaska get what they want, what they demand as American citizens—namely, territorial government, better transportation facilities and more safeguards to navigation.

#### THE GOLDSCHMIDT THERMIT CO.

Welding by the Thermit process offers many advantages and is so economical that welds and repairs accomplished

by this process place it in a class entirely by itself. The Thermit process was invented some nine years ago, and since this time has been extensively used in marine repair work, especially in the welding of sternposts, rudder frames, rudder stocks, crank-shafts and other heavy sections, which but for the Thermit method would have to be removed from their respective places, taken to the shops and welded or repaired in the ordinary way. What a costly undertaking this would be is obvious, when we cite the case of the U. S. collier "Nero," whose stern frame was fractured and broken in three places, but was welded at the Brooklyn Navy Yard in a very few days by the Thermit process. But for this method the whole stern of the vessel would had to have been opened up to remove the stern frame, and after repairs, replaced, the ship's plating put back and riveted, propeller and rudder reshipped, etc., all of which operations require much time and valuable labor, without taking into account the necessity of keeping the vessel in dry-dock until the repairs are completed. The saving in dockage alone, using the Thermit process, often amounts to many times the cost of the Thermit weld.

Aside from a supply of compressed air for the operation of pneumatic tools, and the preheating torch, no outside power is required, and all the materials used for making the welds are light and portable and may easily be brought to the work required to be done.

Thermit steel is produced by the chemical reaction between finely divided aluminum and iron oxide when ignited. This reaction when started in one spot continues throughout the entire mass, without the supply of heat or power from outside, and produces superheated liquid steel (aluminum oxide) at a temperature of approximately 5400 degrees Fahrenheit. From 30 seconds to 1 minute is sufficient time to bring into reaction almost any amount of Thermit. This steel when poured into a mold surrounding the ends of the sections to be united, dissolves the metal with which it comes in contact and amalgamates with it to form a single homogeneous mass when cooled. It is necessary, however, in all cases to preheat the sections before pouring the Thermit steel, as otherwise they would exert a chilling effect on the incoming metal and prevent successful fusion. The essential steps of the operation, therefore, are to clean the sections and remove enough metal to allow for a free flow of Thermit steel, then surround them with a mold, preheat by means of a gasoline torch, ignite the Thermit in the crucible suspended over the pouring gate of the mold, and then pour the Thermit steel.

A series of tests of Thermit welds was made by the Sheffield Testing Works, Ltd., for the British Corporation for the Survey of Registry of Shipping in July, 1909. The tests were made on 5-inch square mild steel bars welded together by the Thermit process; the maximum load applied to the Thermit welded bar was 143 tons, and to the unwelded bar 123.15 tons, showing that the former was about 20 per cent stronger than the unwelded bar. The maximum stress at the place of fracture of the Thermit welded bar was 49,764 tons per square inch. The strength of the welded bar with the reinforcement left on was 170 per cent stronger than the original bar. Detailed directions and instructions for various repair operations will be supplied by the Goldschmidt Thermit Co. of 90 West street, New York, on request. Estimates of the cost of any welding operation will be readily furnished if a blue print or sketch is submitted giving full dimensions of the sections to be welded and showing the location of the fracture.



## PACIFIC MARINE REVIEW

### NEW CONSTRUCTION

The Union Iron Works of San Francisco have now under construction at their yards two steel lumber schooners, one for the Eschen & Minor Co., and one for the Loop Lumber Co., which are duplicates. These vessels are 235 feet long, 42 feet 6 inch beam, depth, moulded, 18 feet 8 inches; I. H. P., 1,250; speed, loaded, 10 knots; cargo capacity of lumber, 1,500,000 feet. These vessels are of steel construction throughout and are fitted with the Union Iron Works oil burning system.

The pontoon for the U. S. navy, which is to be used to carry a floating crane for Pearl Harbor drydock, is to be completed in about a week.

The U. S. submarine torpedo boat F-1 (No. 20), also U. S. submarine torpedo boat F-2 (No. 21), have been completed and delivered to the government after undergoing their stated trials successfully.

The percentage of completion of the submarines now under construction at the Union Iron Works is as follows: U. S. submarine torpedo boat H-1 (No. 29), 75 per cent complete; U. S. submarine torpedo boat H-2 (No. 29), 75 per cent complete; U. S. submarine torpedo boat K-3 (No. 34), 47 per cent complete; U. S. submarine torpedo boat K-7 (No. 38), 26½ per cent complete; U. S. submarine torpedo boat K-8 (No. 39), 26½ per cent complete.

The Craig Shipbuilding Company has recently completed the S. S. "Camino" for Messrs. Swayne and Holt, of San Francisco. This steamer is 310' long, 44' beam, 31' deep and has a dead weight carrying capacity of 5,000 tons.

A steamer 224' in length, 40' beam, 16' moulded depth and 2,000 tons dead weight carrying capacity for the Long Beach Steamship Company will be launched in about six weeks by the Craig Shipbuilding Company and a third steamer, a duplicate of the foregoing, will follow this steamer in about ten days for the Dollar Steamship Company. A fourth steamer 310' long, 44' beam and 22' depth, for the Hammond Lumber Company will be completed about May 1st of next year.

#### THE S. S. "TACOMA" FOR THE INLAND NAVIGATION COMPANY, SEATTLE

The Seattle Construction & Dry Dock Company has been awarded contract for the construction of a new passenger vessel for the Inland Navigation Company to be called the "Tacoma," which will be the fastest and best appointed vessel under the American flag on Puget Sound. The general dimensions of the vessel are:

Length O. A.....	221 feet
Length on waterline.....	218 feet
Length B. P.....	215 feet
Breadth, mld.....	30 feet
Depth .....	10 feet

The vessel will be sumptuously equipped for the convenience and comfort of the traveling public.

The dining room will be located on the main deck aft; the ladies' room forward on the starboard side of main deck, and a smoking room and bar will be placed on the main deck.

The vessel will be propelled by a vertical, inverted, direct-connected four-cylinder, triple expansion engine, driving the steamer at a speed of 19 knots per hour. Ballin water-tube boilers will supply the steam and will burn oil for fuel. There will be an oil-carrying capacity for 36 hours' running. The vessel will be equipped with a steam fire extinguishing system throughout.

#### TO ENCOURAGE SHIPBUILDING IN BRITISH COLUMBIA

We publish herewith the report of a committee from the British Columbia Board of Trade, which clearly indicates the views of this board relative to the encouragement of ship building in British Columbia.

The principal points involved are well taken and it should, in our opinion, not be difficult to impress upon the Dominion government the necessity for improving the existing conditions, so vitally important to the ship building industry of the Pacific Coast:

"Board of Trade Building, Victoria, B. C.,  
"4th September, 1912.

"To the Council, Victoria, B. C., Board of Trade.

"Gentlemen: Your Committee on Trade, Commerce and Transportation considers it desirable that this Board of Trade should renew its efforts to prevail upon the Dominion government to encourage ship building in Canada.

"At present Canadian shipbuilders suffer a great disadvantage in competing with shipbuilders in Great Britain in consequence of British built vessels being admitted into Canada duty free. The wages paid for shipbuilding in Canada are higher than in Great Britain, owing to our tariff, and England being a free country. In addition, material has to be imported and duty paid thereon ranging up to 52 per cent, representing on a well equipped vessel possibly 15 per cent of the total cost.

"In the case of government work a fair-wage clause is inserted in the tender form which imposes upon British Columbia shipbuilders a serious handicap in competing with Eastern Canada and an even greater handicap in competing with British shipbuilders. No allowance appears to be made when considering tenders for the duty which the Canadian shipbuilders have to pay another department of the government on imported materials required in construction of the vessel.

"The Victoria Board of Trade directed the attention of the Dominion government to these conditions in the year 1906, and about the same time brought the matter to the attention of the Royal Commission on Transportation, with the result of a recommendation by that body in favor of protection for Canadian shipbuilders.

"In the opinion of your committee it should not be difficult to prevail upon the Dominion government to improve present conditions, and we recommend that the board obtain from the Pacific Coast shipbuilders a definite statement in support of a request of, say, a bonus equal to the difference in cost of construction, or, at the least, the admission into Canada duty free of all the materials required in construction of a vessel.

"Your committee cannot too strongly urge the importance of developing shipbuilding on a large scale, as by so doing a field will be created for subsidiary new enterprises, and it is therefore urged that the co-operation of other Boards of Trade be secured and the case again presented to the Dominion authorities through the proper channel.

All of which is respectfully submitted,

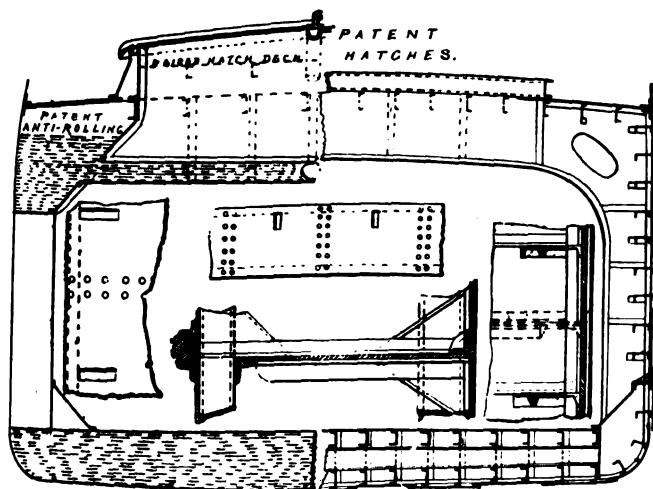
"H. F. BULLEN, Chairman.  
"F. A. FUTCHER.  
"C. LOEWENBERG,  
"E. F. RADIGER."

Three generator sets, to be driven by Terry turbines, each of a capacity of 100 k. w., are to be installed on the Great Northern Steamship Company's steamship "Minnesota." They will be used for lighting and power service and will replace the reciprocating engine sets.

## COMBINATION OF SHIP PATENT DEVICES

**I**N the following sketch illustration of a midship section, Mr. Joseph R. Oldham, N. A., has combined several patent features with an idea of obtaining maximum strength and stiffness combined with the advantages of quickly disposing of a cargo.

The vessel is constructed on the longitudinal system, with the longitudinal members continuous, the transverse web frames being notched out inside of the shell bar, the shell bar being continuous, so that each web frame may be considered as continuous. The longitudinal members are of necessity notched out around the frame bar, compensation being had by riveting a bar on the inboard flange of the longitudinal as indicated in the sketch.



In the familiar construction the web frame bars and plate margins are cut away from without. In the improved system the frame bars and plate margins remain intact, the plate only being perforated clear of the bars.

With this arrangement the transverse framing is maintained at full strength and the longitudinals sacrificed at the union. This is believed to be the correct principle and is one that this journal has advocated at some length in previous issues. In other words, it is maintained that the shell plating decks, if continuous, and inner bottoms are sufficient, and the logical members to care for the longitudinal strength of the vessel. But of course transverse framing and longitudinal framing are necessary to keep the plating in its proper form and tie the whole together.

A ship considered as a girder would, if of only one deck, be of the same form as a T beam, the bottom and inner bottom being the lower flange, the deck the upper flange, and the sides the web. The same laws of bending apply to each case and the object to be attained in each case for longitudinal strength is to obtain the greatest moment of inertia for a given weight of material, or in these sections to distribute the maximum material into the flanges and the minimum into the web. In the case of a beam it is of course practicable to design and test it afterwards to determine the results. All the sections now rolled are the result of trial and experiment and extensive testing, and as a consequence the material is distributed to the very best advantage.

This is also true to a greater or less extent with the built-up girders, and as some of these girders for bridges are very deep, the webs require transverse stiffness corresponding to the frames of a vessel.

In the vessel, however, we can only distribute our material to our best judgment, but we cannot test the

construction as we test a beam; consequently we do not know whether we have more strength than is necessary or not. Lack of strength is generally indicated by opening of seams and rivets, but a ship seldom or never (the writer knows of no such case) is so weak as to change her form, from which it is safe to assume that the longitudinal strength of vessels is amply cared for and the minor weaknesses may be considered as purely local. One reason for the apparent strength of vessels is the method of calculation. As is well known, in calculating the strength of a vessel it is placed on a wave first in the trough and then on the crest, the wave being of the same length as the vessel, and calculating the resulting bending moments and shearing forces. This, of course, gives the worst condition, but as the wave lengths met in nature do not increase in size, and as modern ships are increasing all the time, it will be seen that more strength is provided than is necessary, based on this method of calculation.

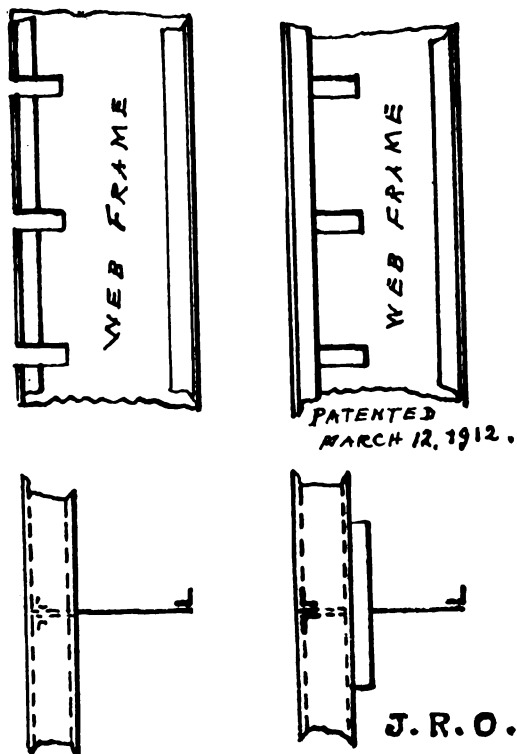
The first vessel to be built on the longitudinal system of framing may be said to be the "Great Eastern," a vessel designed with such forethought that after a lapse of half a century it is probable that as a result of the "Titanic" disaster we will return or rather advance to its type of construction. With a double bottom extending to above the water line, numerous longitudinals, in fact, of the same general construction as a naval vessel, it is only the question of economy which prevents its adoption in the Atlantic passenger service. However, with the pressure of public opinion, we are of the opinion that it will be adopted in a short time, and the unsinkable ship will have advanced a great step towards attainment.

In more recent years a new type of construction known as the Isherwood system has come into vogue, and the amount of tonnage constructed on this principle is increasing enormously.

This journal, commenting on the Isherwood construction in its early conception, was not favorably disposed towards it, on the ground that it was considered to not result in any decreased weight over the usual construction. In view of the popularity of the new system, however, we are forced to change our views, but are inclined to believe that the construction societies are waiving certain requirements, and we believe they should, in fairness to that particular construction, in which case there might be and probably is a difference in weight and cost in favor of the longitudinal construction.

With reference to the section arranged by Mr. Oldham, we quote the following statements made by himself:

"The 'Great Eastern' was the first large floating structure having the shell and deck plating directly stiffened and supported only by longitudinally extending plate girders. In referring to this steamship, more than half a century ago, Mr. J. G. Lawrie said, in addressing the Association of Scottish Shipbuilders, that 'the builder of the 'Great Eastern' constructed ships without any transverse frames, except at distant intervals, using only longitudinal webs or ribs. In such ships the rivets in the bottom of the beam knees have been loosened or cut across, and the lead scupper pipes have been broken asunder or torn out of the flanges. If this action manifests itself in ships with frames of considerable strength, plainly it must take place to a much greater extent in ships with no (transverse) frames at all. It does not seem to admit of a doubt that in a ship heavily laden, when lying over, there is a large diagonal straining; and although, in ships lightly laden, this action may not produce injurious results, yet the facts stated certainly do not recommend the mode (i. e., the



omission of transverse frame bars) for ships performing ordinary duties. The strength of the 'Great Eastern' would appear to be deficient, not only in the quantity of material employed, but from the manner in which that material is arranged. The transverse frames are cut across in no less than thirty-two places by the longitudinal ribs. The modern system of longitudinal construction, as now practised perpetuates this error.'

"By my device, however, the transverse ribs are not cut across, but remain intact the same as the margins of my web plates and arched girders. If the 'Great Eastern' was the 'strongest vessel ever built' (?) her transverse strength must have been, at least mainly, due to the close spacing of the strong and numerous transverse bulkheads, these being spaced but sixty feet apart. Such small intervals, however, which equal only 72 per cent of main breadth of the hull, are absolutely impracticable for a modern cargo steamer, hence the necessity for continuous web-frame bars, connected to the shell plating, as also the bars of the transverse bulkheads. A strictly modern authority, in referring to the cutting or notching of the web-frame bars and plate margins, in a letter to Engineering, says: 'It seems possible that in this system the decrease due to the absence of continuous vertical side framing may more than counterbalance the increase due to the disposal of more continuous material longitudinally, and it may yet be found possible to produce a stronger ship girder of given weight with vertical side framing.' My vertical side frame and arched girder bars are all intact. In the annexed diagram I show the modern system of cutting or notching the web-frame plate margins and the frame bars, practically as Mr. Lawrie and modern authorities anathematize. I also exhibit my method of construction, which leaves these bars intact, and my web plate and arched girder margins equally whole, the perforations of the web plates being inside of the solid frame bars, by which system, with the compensation provided, the normal strength of my transverse and longitudinal framing is practically maintained throughout."

In the above article we have purposely refrained from commenting on the anti-rolling tanks and the hatch deck, both of which are special features not peculiar to this section of vessel. Anti-rolling tanks using water in motion as the balancing medium are being introduced to some extent under a previous patent, and so far as known are operating successfully, and their installation is a simple matter on 'most any type of vessel.

#### PACIFIC MAIL STEAMSHIP COMPANY NOT TO CONSTRUCT NEW SHIPS

R. P. Schwerin, vice-president and general manager of the Pacific Mail Steamship Company, confirms the report that this company will not build four \$3,000,000 steamships, as had been planned, the change of intention being attributed to the attitude of Congress, which Mr. Schwerin considers inimical to American shipping interests.

"We shall not build the ships," says Mr. Schwerin, "because it is contrary to law since the Panama Canal H. R. 21969 has become a law. The temper of our legislators towards American shipping is such as to make it dangerous for any one to build ships.

"The Senate canal committee had provided that ships of American registry, however owned, could be placed in the coastwise trade between ports of the United States when bound to or from any foreign country on a transoceanic voyage. This provision was struck out without any hearing. Five months had been spent in preparing the bill, and there had been hearings and intermittent debates in the Senate. Practically all the speeches in the Senate, with the exception of one anti-railroad speech, showed a tendency toward drastic interstate commerce commission legislation and eventually government ownership.

"One senator went so far as to say, practically, that the operation of the Panama canal would be the first opportunity to bring the railroads to their knees, and that if this bill should lead to a monopoly of the canal through private ownership of the carriers, thereby allowing the railroads to maintain rates, it would be the duty of the government to operate a line direct through the canal, which would compel the railroads to reduce rates. Moses E. Clapp, chairman of the Senate Interstate Commerce Committee, declared that this proposed divorcement of railroad and steamship interests was the greatest piece of constructive legislation considered at this session.

"As matters stand now the railroads have got to show before 1914 just what they own in the way of vessels and water terminals, and if in the opinion of the Interstate Commerce Commission the use of that property is detrimental to the public welfare the railroads are to be stripped of all such property without the right of appeal."

#### NEW STEAMERS FOR GRACE AND COMPANY

W. R. Grace & Co. have at present contracts for three steamers placed with Cramps Ship Yards, Philadelphia, for trade via the Panama Canal.

The first steamer, the "Santa Cruz," will be about 6,500 tons dead weight, with accommodations for fifty passengers, speed 12 to 14 knots. The other two steamers will be considerably larger, over 8,000 tons dead weight capacity, 404 feet in length, 54-foot beam. These will not have passenger accommodations and will be of the shelter deck type, suitable for carrying general cargo to best advantage. They expect to name these boats the "Santa Clara" and "Santa Catalina."

The first steamer will be finished by the end of the year and the other two about the middle of 1913.

## NEW TRIPLE SCREW STEAMER FOR AUSTRALIAN MAIL LINE

### NEW TRIPLE SCREW STEAMER FOR CANADIAN-AUSTRALIAN MAIL LINE

**T**HE triple screw Royal Mail steamer "Niagara," built to the order of the Union Steamship Company of New Zealand, Limited, for the Canadian Australasian Royal Mail Line by Messrs. John Brown & Company, Limited, Clydebank, to the highest class at Lloyd's, was successfully launched on August 17.

This handsome vessel, the largest and finest of the fleet, will take up the company's service between Australia and Vancouver about April, 1913. The leading particulars are:

Length over all—543 feet.

Breadth moulded—66 feet.

Depth to upper deck—37 feet 6 inches.

Depth to boat deck—64 feet.

Gross tonnage—13,000 tons.

While principally designed for passengers, the "Niagara" will carry a considerable amount of cargo, which will be worked from and into the holds by hydraulic hoists—an almost universal system on the company's passenger steamers. A large part of the hold space has been insulated for the carriage of frozen meat, butter, chilled fruit, etc.

The accommodation for passengers is very extensive and luxurious, which applies to all three classes.

Accommodation for 281 first-class passengers is provided amidships, on main, upper, shelter and promenade decks, with state rooms arranged for one, two, three or four passengers, while several groups of cabins have been arranged for family parties. On the shelter and promenade decks there are a number of one and two-berth cabins fitted with bedsteads instead of the ordinary ship's berths.

Two cabins de luxe, in every way worthy of the name, are situated on the shelter deck close to the main vestibule.

The first-class dining saloon, a spacious apartment, has accommodation for 190 passengers and is decorated in Louis XVI. style. The tables are all arranged for small parties.

The first-class lounge, situated on the promenade deck, is lighted by a large dome on the boat deck.

An electric elevator is arranged at the main stairway, between the main and promenade decks, for the convenience of passengers.

Second-class accommodation for 210 passengers is arranged aft, with dining saloon on upper deck.

The music and smoking rooms are situated above.

Accommodation for 176 third-class passengers is situated forward, with the provision of good public rooms.

The crew's quarters generally have been arranged clear of passengers, the firemen occupying a space aft, with separate rooms for each watch. The accommodation allotted to them has been carefully arranged.

The engineers' rooms are on the upper deck, abreast of the engine room, and have received every attention.

The captain and officers, in accordance with the usual practice on the company's steamers, are accommodated on the boat deck, immediately under the flying bridge. All of the latest improvements for the safe navigation of ships have been provided.

Great care has been exercised towards having the best possible means of heating and ventilation, as the vessel passes from tropical to cold weather on the voyage from Australia to Vancouver. The heating and cooling is on the Thermotank system, which will insure in the coldest weather at Vancouver a temperature of not less than 65 degrees Fahrenheit. The thermo tanks are designed to

change the air in any of the compartments to which they are connected ten times per hour. The system also provides a continuous supply of fresh air to all the living quarters of the ship, which can be heated to any temperature. There are 19 thermo tanks in the installation, all of which are used for ventilating the first, second and third-class accommodation, also for the officers' and crew's quarters.

The lifeboat accommodation is more than ample to provide for all passengers and every member of the crew, which has always been the practice of the company on their large steamers. The boats are fitted with Welin's patent quick-acting davits, Mills' disengaging gear and Welin's patent chocks. A steam launch is provided for service when the ship is lying off some of the intended ports of call.

Well-fitted hospitals, infectious and non-infectious, have been placed right aft on the promenade deck, clear entirely of passengers. The large dispensary is adjacent to the doctor's rooms.

The wireless telegraphy installation, as well as telephonic communication between the various public rooms and different points of the ship, are all of the latest type.

A Clayton fire extinguishing apparatus has been fitted with all necessary appliances.

#### Machinery.

The propelling machinery of the "Niagara," a combination of reciprocating engines with a Parsons low pressure turbine, is one of the latest examples of progress in marine engineering, and has been constructed by the builders.

The superior economy of the system is due to the fact that increased power is obtained with the same steam consumption by expanding the steam in the low pressure turbine beyond the limits possible with the reciprocating engine. Steam is supplied by ten cylindrical boilers, each fitted with four furnaces and working under Howden's system of forced draught, the boiler pressure being 220 pounds.

A new feature is that this will be the first vessel burning oil fuel to have a British Board of Trade certificate for carrying passengers. For the purpose of carrying this oil fuel the ship has specially constructed bunkers of ample capacity to carry sufficient oil for the return journey, and also to carry coal, should this be found necessary.

The whole of the bunkers, Nos. 2 and 3 holds, have been made air and oil-tight up to the main deck. Heavy fore-and-aft bulkheads are fitted throughout, adding strength to the ship and insuring safety.

Four electric engines are fitted to cope with the exceptionally complete system of lighting, etc., and to render it unlikely that any hitch will result in a breakdown.

An emergency plant for light has also been arranged on the boat deck, so that in case of any accident, light will always be maintained.

Altogether, there are over two thousand lights throughout the ship, while an electric fan is fitted in each state-room.

The hydraulic engine installed in the engine room is capable of putting the whole of the ten hoists through a complete cycle within the space of one minute. From this fact alone, it may be gathered how powerful the installation is; the engine, in fact, is one of the largest and most powerful ever put into a ship for cargo discharging purposes.

The steering gear is of the hydraulic type, embodying all the latest improvements.



### SHIPS UNDER CONSTRUCTION AT NEWPORT NEWS SHIPBUILDING AND DRYDOCK COMPANY

"Texas," U. S. battleship, 567' length O. A., 94.40% breadth, disp. 27,000, 28' 6" draft, twin screw, speed 21 knots, oil fuel, 12 B. & W. boilers.

"Proteus," U. S. collier, 500' length O. A., 62' breadth, 39' 6" depth, 19,000 disp, 27' 6" draft, twin screw, speed 14 knots, fuel, coal, 3 D. E. boilers.

"Nereus," U. S. collier, same as above.

"Lenape," passenger and freight steamer for the Clyde Line, length over all, 399'; breadth, 50', disp., 6,220; draft, 17', single screw, speed, 14 knots; fuel, coal; boilers, 4 S. E.

"Adeline Smith," lumber steamer for C. A. Smith Lumber Company, length, 310' 6"; breadth, 44' 6"; depth 21' 6".

No. 1 car float, for C. & O. Railroad Co., length, 340'; breadth, 44' 4"; depth, 12' 6".

"P. H. Crowell," owners, Crowell and Thurlow; length, 328' 2"; breadth, 46'; depth, 24' "; disp., 6,610; draft, 20'; single screw, speed, 10 knots; fuel, coal; boilers, 2 S. E.

"Illinois," tanker for Texas S. S. Company; length, 413'; breadth, 52'; depth, 30' 9"; draft, 24'; single screw, speed, 11 knots; fuel, coal; boilers, 2 S. E.

Freighter for N. Y. & Porto Rico S. S. Co., length 347' 6"; breadth, 46' 9"; depth, 25'.

Ammunition lighter for U. S. government, length, 128'; breadth, 30'; depth, 7' 8".

Oil barge for So. Pac. S. S. Co., length, 126' 8"; breadth, 43'; depth, 14'.

Freight and passenger steamer for Matson Navigation Co., length, 501'; breadth, 58'; depth, 44' 9".

Tanker for So. Pac. S. S. Co., length, 395'; breadth, 59'; depth, 28'; draft, 24'; single screw, speed, 16 knots; fuel, oil; boilers, 6 B. & W. and 3 S. E.

Tanker for So. Pac. S. S. Co., length, 395'; breadth, 59'; depth, 28'; draft, 20'; single screw, speed, 11 knots; fuel, oil; boilers, 2 S. E.

In addition to the new work this company is converting seventeen ships of the Southern Pacific Steamship Company's Atlantic line from coal burning to oil burning.

### LOSS OF MERCANTILE TONNAGE LAST YEAR.

In the summary of vessels totally lost, broken up, condemned, etc., in Lloyd's Register it is shown that in 1911 the gross reduction through wreckage of effective mercantile marine tonnage of the world was 888 vessels of 884,843 tons, omitting all vessels of less than 100 tons. In this total 427 vessels of 619,752 tons were steamers and 461 of 265,091 tons were sailing vessels. In 1910 the wreckage aggregated 62,847 tons more than in 1911, there being an excess in destruction of steam vessels of 47,688 tons and in sailing vessels of 15,159 tons. In 1911, 255,517 tons were removed from the Register by breaking up and dismantling vessels, as against 356,154 tons in 1910, the highest total of record.

Of steamers and sailing vessels removed from merchant fleets of the world in 1911, only 29 per cent of the steamers and about 28 per cent of the sailing vessels were removed by dismantling and not in consequence of any casualty. Of tonnage wrecked in this manner, over 34 per cent represented British vessels. Over 50 per cent of steamers lost and over 51 per cent of sailing vessels lost was due to stranding and kindred casualties. Abandoned, foundered and missing vessels together represented more than 27½ per cent of the steamers and 26 per cent of the sailing vessels which were removed from the mercantile marine last year.

Notwithstanding the great tonnage of the United Kingdom, the losses sustained by British vessels in 1911 compared favorably, it is stated, with losses sustained by other principal maritime countries.

### THE PROBABLE DIMENSIONS OF SEA-GOING VESSELS OF THE FUTURE

The chief surveyor of the British Corporation for the Survey and Registry of Shipping, Mr. J. Foster King, in his interesting paper on the above subject, read before the International Congress of Navigation recently held in Philadelphia, and in relation to the dimensions to be given to maritime canals, stated:

"It is interesting to note that the largest draught given for vessels engaged in the Baltic trade may be stated at 19 ft., and seems to have stayed at that figure for 45 years, thus indicating a block in draught development and consequent isolation from ordinary trade conditions. The results falsify the views that the rate of general progress during the past 20 years has been far more rapid than in the preceding years. The extension of the line of past development indicates that in 1970 vessels of 900 ft. by 122 ft. will be the largest built for service on the great passenger routes to India, South Africa, etc., as against a probable 1,100 ft. by 128 ft., and a possible 1,800 ft. by 220 ft. of the longest Atlantic ship. All ocean boats, whether cargo, passenger, or both, with the exception of the very large Atlantic liners, will probably be fifty per cent longer and sixty per cent broader in 1970 than they are today, so that the counterpart of the present day 500 ft. by 60 ft. intermediate steamer will be 750 ft. by 96 ft., of the 380 ft. by 48 ft. small passenger steamer will be 570 ft. by 76 ft., of the 400 ft. by 55 ft. big tramp will be 600 ft. by 88 ft., and of the 280 ft. by 40 ft. small tramp will be 420 ft. by 64 ft., while the draught will be from 27 ft. to 40 ft. in 1970, and indications as to the big Atlantic steamers point to 46 ft. as the draught development of the great ports and waterways in 1970.

### THE ALMY WATER-TUBE BOILER

For the information of those of our readers who may be interested in water-tube boilers, either for marine or stationary purposes, we give the following particulars in regard to the Almy Patent Sectional Water-tube Boiler. The manufacturers claim the following distinguishing features: Simple construction, good circulation, large combustion chamber, greatest amount of heating surface possible in fire-box, efficient separator, large water space, mud-drum, accessibility for cleaning and repairs, small space required, light weight, strength and durability, and non-explosibility.

Briefly described, the boiler consists of an upper and lower manifold, side and fore and aft sections, feed-water heater, steam dome and water reservoir, grates and casing. The top manifold extends across the front and along the sides of the boiler; the bottom manifold along the sides and across the back of the boiler below the grates. Between the top and bottom manifolds is the heating surface, which is composed of side and fore and aft sections. The top manifold is connected at the front of the boiler to a vertical steam dome or separator. The steam dome contains the separator, which is riveted to a horizontal water reservoir extending across the boiler front. This reservoir is connected by down-flow pipes to the ends of the bottom manifold. A water heater of two or more layers of pipes is placed upon the top manifold, and one end of the heater is connected to the feed pipe, the other to the under side of the water reservoir. The casing is composed of upper and lower parts, ashpan and hood.

The heating surface is constructed of special tubes of standard pipe size, and of the best quality of metal. All manifolds return bends, elbows and Y fittings are of the best quality air-blast malleable iron. The steam dome and water reservoir are of the best lap-welded tube. The casings are of sheet metal. The ashpan (essentially part

of the boiler) is of sheet metal, angles, channels and through bolts. The furnace and clean-out doors, frames, dead-plates and baffle-plates are of cast and malleable iron. The grate bars are soft steel, wrought or cast iron, according to service.

These boilers are designed for a pressure of 250 pounds per square inch; each of the sections which form the heating surface is tested to 1,000 pounds hydrostatic pressure before being assembled in the boiler, after which the complete boiler is tested to 500 pounds before leaving the works.

These boilers are made in five different classes or sizes, each unit containing a grate area of  $6\frac{1}{2}$  square feet with a heating surface of 186 square feet, up to the largest size, having a grate area of 54 square feet and heating surface of  $1,842\frac{1}{2}$  square feet. Nearly all the heating surface in the Almy boiler is at right angles to the flow of hot gases; experiments have proved that one square foot of heating surface at right angles to flow of heated gases is equal to four square feet at 45 degrees, and eight square feet if placed with the flow of gases.

For quick steaming for emergency or fire purposes, it is claimed that these boilers are equal to those used on steam fire engines, when fires have been previously laid, and several large manufacturing establishments have installed these boilers to operate large duplex fire extinguishing pumps. Steam may be raised from cold water in 5 to 7 minutes from the time of lighting fires, and at a test made some years ago with a boiler having 16 square feet of grate surface 70 pounds of steam was raised in 6 minutes and 52 seconds.

Quite a number of these boilers, both marine and stationary, have been supplied locally, and to the Pacific Coast generally, through Mr. W. W. McKenzie, agent for the Pacific Coast, 66 West Marion street, Seattle, Wash., and among these users we may mention The Times Printing Co., Luna Park, International Contract Co., Eagle Harbor Transportation Co., etc., all of Seattle. Upwards of 300 vessels have also been equipped with the Almy boiler.

The works of Almy Water-tube Boiler Co. are at 178 to 184 Allen's avenue, Providence, R. I.

#### APPOINTMENT OF CIVILIAN LIGHTHOUSE INSPECTORS.

The act of June 17, 1910, reorganizing the lighthouse service, provides for the gradual appointment of civilian lighthouse inspectors, each lighthouse district to be placed in charge of an inspector.

All of the lighthouse districts, with the exception of the three river districts, will soon be in charge of civilian inspectors.

The selection of competent men to these positions is necessary to the success of the plan of reorganization adopted by Congress. These positions are under the classified civil service, and therefore it is essential that they be filled in accordance with civil service rules. The desirable qualifications for a lighthouse inspector, considering the work for which he is to be responsible, include a knowledge of nautical affairs and the needs of navigation, training in civil, mechanical and marine engineering as required in connection with the construction and repair of lighthouses, docks, storehouses, fog signal stations and other structures connected with lighthouse work; a knowledge of marine affairs necessary for the maintenance and repair of light vessels, lighthouse tenders and floating aids to navigation; business training essential for the administration of a lighthouse district, including the purchase of supplies, and ability to judge and handle men. The appointments have been made from the men in the light-

house service, or in branches of the government having similar work, by selecting in each case the best men available, depending solely on his record and his merits with respect to the proportion of these qualifications possessed.

Of the 17 appointments as lighthouse inspectors, 13 have been by promotion of persons who have had from five to forty years' experience in the lighthouse service, the average length of service being eighteen years. The other four have been by appointment of persons who have had from eight to thirteen years' experience on other government vessels, each one of whom has had command for from four to eleven years, engaged in hydrographic work, in which they became familiar with the needs of the lighthouse service. Of those promoted in the lighthouse service, seven had from twelve to twenty-three years' experience on vessels of the service, and five of these had been masters of lighthouse tenders from seven to twenty-one years. Five others were promoted from positions as superintendents in the lighthouse service, having had from five to forty years' experience in the engineering and construction work of the service, and from four to twenty-two years in responsible charge of work. One was promoted from a position of chief clerk in a lighthouse district, having had twelve years' experience in the service. All but six of those appointed as inspectors have thus had extensive and responsible experience on government vessels, and these six have had long experience on such vessels in connection with other work of the lighthouse service on which they have been engaged.

#### OFFICERS AND CREW OF U. S. R. C. "MANNING" COMMENDED BY PRESIDENT TAFT.

It is refreshing to note the commendation by President Taft of the heroic acts of the commander, Captain K. W. Perry, officers and crew of the U. S. R. C. "Manning" during the recent Katmai eruption in Alaskan waters.

Particular mention is due Second Lieutenant W. K. Thompson of the "Manning" and the crew of men under him, who, at the risk of their lives, rescued seven men who had been cut off from escape at a cannery some few miles distant from the cutter.

Mr. Taft's letter to Captain Perry is as follows:  
"Sir:—

"From the official reports received from the commanding officer of the Bering Sea fleet, and from other sources as well, it appears that during the recent eruption of the volcano known as Mount Katmai, in Alaska, you and the officers and men of the "Manning" performed gallant work.

"While you could have put to sea at the commencement of the eruption and thus taken your command out of the zone of danger, it is of record that you remained in port in the face of apparent destruction, in order to give such aid as was possible to those on shore, who had no means of escape, and that your officers and men welcomed your action.

"The able manner in which you assumed charge of the surrounding country both during and after the catastrophe, to the end that not only were all the people saved, but order was restored out of chaotic conditions, compels admiration and deserves praise.

"It is my pleasure, therefore, to commend you, your officers and your crew for your heroic services on this occasion.

"Very respectfully,  
(Signed)

"WM. H. TAFT."

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## A HEARING BEFORE THE UNITED STATES SENATE ON MEANS TO SAFEGUARD NAVIGATION

**T**HE navigation codes of the principal maritime nations of the world have a surprisingly large number of rules and regulations in common, varying only in the different requirements best adaptable to the conditions of the nation in which they are framed, with perhaps the desire to excel each other to some extent in friendly rivalry.

We refrain from any expression concerning the so often discussed custom of foreign nations to buy ships anywhere, whether of foreign or domestic build and register them as national vessels under the national flag, in which respect, as it is well known, the United States of America is the single exception amongst the nations of the world.

However, our navigation code differs in many other directions and how sadly lacking it is compared with other nations is also known and has to a large extent been previously discussed in these columns.

It is apparent that the important problem of safety in navigation, recently so diligently debated in the United States Senate, will eventually result in the reconstruction of our navigation laws, which naturally and principally do concern safety in water transportation and consequently they cannot and will not remain the same venerated oracle which should have been conned to partial destruction in the days of our apprenticeship, long, long ago.

If we may judge by the difference here and there in the doctrine of the old and the new to come, an opinion on the most necessary points may not be regarded superfluous nor of questionable importance. This has become vividly manifest to our legislators and in particular to the members of the Committee of Commerce, recently confronted with discussions for the framing of future regulations for "Safety in Navigation on Waters," brought forth by the "Titanic" disaster. The Committee of Commerce is in possession of the different maritime codes of foreign nations now undergoing a sifting never more thoroughly attempted, which enables this committee to make a comparison with our own code, thus serving to prove its obsolescence and inadequacy, more so than anyone could have possibly attempted to do in other ways.

We note with satisfaction that steps are beginning to be taken along the lines indicated in the following phrase, "As apothecaries we make new mixtures every day, pour out of one vessel into another; and as the old Romans

robbed all of the cities of the world to set out their bad sited Rome, we may skim off the cream of other's wits, pick the choice flowers of their tilled gardens and set out our own sterile plots."

The hearing on June 6th before a sub-committee of the Committee of Commerce, United States Senate, 62nd Congress, 2nd session on S. J. Resolution, S. 6976 and S. 7038, to promote "Safety of Navigation on Water," contains many excellent and worthy discussions, from which we extract in part for commendation, condemnation or diversity of opinion, as the case may present itself, with due regard to the rulings and expressions of view of those who assisted in this interesting discussion, comprised of 68 pages.

As any hearing of such extensive scope branches minutely into the many different and vital subjects involved, the discussion and able testimony of those present is doubly interesting, but space does not permit its reproduction in these columns. It, however, affords us great pleasure to quote in part the just expression of opinion of Mr. Chamberlain, the able commissioner of navigation, whose views and commendations are indeed worthy of consideration and will unquestionably be appreciated by all interested in the discussion of framing the important regulations in question.

"It does seem as if there were a great many details in that bill, that perhaps should not go into a statute. I do think the principle is right—that before comprehensive regulations are to go into effect they should lay before Congress for particular time. That is desirable for two reasons. It is desirable from the administrative point of view, so that administrative officers will be in a position to have their acts reviewed. We notify you gentlemen of Congress that you have delegated power to us, and this is the way we wish to exercise it. If we are not right, tell us, and we won't do it. That is all any administrative officer wants to do. On the other hand, from the point of view of Congress, when you delegate power it is necessary to see that it is exercised in the sense in which you have given it. Beyond that the publicity that results from sending matters to Congress is in itself an assurance to the public. They know what the law is.

"Now, the regulations under these sections are framed. They are approved and the people who have to obey them know what they really are only when they are printed, and they have the effect of law and are scattered broadcast over the country.

"Senator Perkins: They are formulated by the Board of Supervising Inspectors, are they?

"Mr. Chamberlain: Yes sir, but of course that body gives full and ample hearings, but the public does not know what is going to be done. No, so far as legislation is concerned, persons who are interested know at least that when a bill is passed by one branch of Congress or the other it is likely to become a law, but under the broad exercise of the power of regulation now granted you, really do not know anything until it is the law."

The subjoined letter of the Secretary of Commerce and Labor to Senator Nelson is of intrinsic value and on which letter Mr. Chamberlain will endeavor to offer details on the general lines during the committee's continued session.

Washington, May 7, 1912.

Department of Commerce and Labor,

My Dear Senator: I have endeavored to follow the usual practice in reporting upon individual bills that have been introduced since the "Titanic" disaster and have been referred to this department for report. It appears to me, however, that reports upon individual bills submitted to this department, and perhaps to others, will not prove satisfactory, and may indeed lead to some confusion. In the meantime, it has occurred to me that, in considering

amendments to the existing law, we ought perhaps to bear in mind the following considerations:

First. How far are we prepared to go in the control of regulation of our own shipping interests? It seems to be admitted that the requirements of the law, as it now reads, are well up to the best standards in force in other countries. At the same time, those requirements will no doubt be strengthened, and the first question, therefore, appears to be, to what extent are we willing to go in the regulation of our own shipping?

Second. How far are we willing to apply the requirements of our law to foreign shipping clearing from our ports? This appears to me to present a question of policy rather than authority. For illustration, in the statute which provides for wireless apparatus we have made no distinction. In the passenger act we have undertaken to impose conditions, regardless of the ownership of the vessel, and I assume, therefore, that we have the right to impose our requirements, regardless of ownership, in our own ports. If it is suggested that we go to that extent, we ought to consider, however, that the service will be considerably increased, and that, in some respects at least, the examination for which our laws now call will be practically impossible. For illustration, the requirements for life boats may easily be insisted upon, and it appears now as though different countries and steamship companies would compete in making provision in this respect. But, as soon as we consider the inspection of boilers, machinery, hulls, etc., we are confronted by a practical difficulty. Much of this inspection involves plans of construction, and, indeed the inspecting work should be done while the ship is in course of construction. This obviously could not be done without consent of foreign countries, and to us the question is therefore presented in what measure we shall endeavor to protect passengers and crew by our inspection of ships and to what extent we shall rely upon the inspection of foreign countries, insisting simply that such countries fix reasonable standards.

In this same connection it appears to me that the character of the crew is as important as the construction of the ship; and if the protection of life at sea is to be advanced or secured, the selection of crews, their training, and their drill should be insisted upon with more regard than up to this time has been the case.

Third. But, however far we may be willing to go, there appears to me no escape from the conclusion that much of the control must finally be left to international agreement. Even with respect to the subjects just referred to there will be room enough for friction and invitation enough for retaliatory legislation. Apart from that, we can not possibly assume to regulate the speed or the course of ships; and while we may indirectly do much to control the character of crews we can not possibly assume to pass upon the officers of the ships nor can we dictate or superintend the construction in any respect. Without attempting further illustration, I am inclined to believe that for much of the result to be accomplished we shall have to look for international conference. Of course, this time is peculiarly opportune, because it is not likely that any civilized country would decline to participate in such conferences. If measures looking to that end are promptly taken and the conferences can be held before the effect of the disaster has died out, it appears to me that great progress in the field of maritime regulation may grow out of the deplorable disaster of the "Titanic."

Sincerely yours,

CHARLES NAGEL, Secretary.

HON. KNUTE NELSON,  
United State Senate.

We cannot coincide with the following quoted from the above letter: "It seems to be admitted that the requirements of the law as it now reads are well up to the best standard in force in other countries." The frequent comparison of our law with those of other nations has repeatedly proven that this is not at all the case and which this hearing again conclusively ascertains.

Mr. McKeige came from Brooklyn to Washington, D. C., at his own expense to appear before the committee because he is interested in the general welfare of the public in this matter and is the father of the commander of an ocean-going ship. He gave some remarkable testimony regarding the faulty construction of the law from which we quote in part as follows:

Mr. McKeige: "Hull equipment, navigation rules and safety devices." Here is a law showing who are eligible for supervising inspector general and supervising inspector. They have qualified as marine engineers and nothing else. They know no more about navigation than a child unborn. Those are the men according to law, who must be appointed supervising inspectors.

Senator Nelson: What change would you make in that respect, I mean as to supervising inspectors; what other qualifications should they have?

Mr. McKeige: I am getting to that now. Have two boards, one for boilers and one for hull equipment, or rather the deck department. For hull and equipment, navigation rules and safety devices, a captain from the New York and Cuba Mail Steamship Company, a captain from the American-Hawaiian Line, a captain from the Morgan Line—the three largest steamship companies we have—a captain from each and what those men do not know about safety devices and navigation is not worth knowing.

Do you catch that, Senator?

The chairman: Yes.

(Why not include a captain of the American line, the only trans-Atlantic steamship company under the American flag, and why not a captain from the Pacific Mail Steamship Company, the only large trans-Pacific steamship company under our flag, in fact, these companies operate the largest ocean passenger carrying vessels under our flag.)—Ed. Note.

Mr. McKeige: A captain from the New York and Cuba Mail Steamship Company, one from the American-Hawaiian Line and one from the Morgan Line. Those are the men whom I claim are the men to decide who are to officer a ship. The law is now that the marine engineers, whose duties are altogether different than those of the deck. They are the men who make the rules as to how a man shall be examined for mate or pilot, whatever it may be. Now, it does not seem to me to be common sense that a marine engineer shall make the rules to license a man as a mate, pilot or captain.

Senator Smith: You ought to have disinterested men, familiar with the situation. But with no personal motive except the public good.

(Exactly so!)—Ed. Note.

Mr. McKeige: This is a fair illustration of what the master goes through to get a captain's license, or mate's—and I read from the general rules and regulations prescribed by the board of supervising inspectors, at page 95:

#### Masters of Ocean Steam Vessels.

Any applicant for license as master of ocean steamers must furnish satisfactory documentary evidence to the local inspectors that he has had three years' experience on ocean steamers, one year of which has been as chief



mate, or five years' experience on ocean sail vessels of 300 gross tons and upward, two years of which must have been as a licensed master of sail vessels, and he shall be subjected to such examination as shall satisfy the inspectors that he is capable of navigating such vessels and of determining latitude from the meridian altitude of the sun, latitude by ex-meridian altitude of the sun, etc.

Then it goes on to state the qualifications he must have. I can live out in Kalamazoo, or live in Cheyenne, and come to this coast and be as good a navigator theoretically as anybody going up the coast or crossing the ocean. All I have to do is to pay my fee and have a correspondence course at Scranton, get my artificial horizon with a dish of water or a mirror out in the plains, and I can get my latitude and longitude. I am a navigator. I come here to the coast and spend a couple of months on the Old Dominion line, so as to get the height from the water—allow for the height of the water below where you stand to take your sight. In two months I am a navigator who can pass that examination. From page 1 to the last page in the book the word "seaman" does not appear. It does not appear in that book as far as I have been able to find it—seamanship.

Senator Smith: Engineering pamphlet, have you, by mistake?

Mr. McKeige: No, sir; I do not know anything about the electrical engineering part of it. I read further from this pamphlet:

Any person who has had three years' actual experience as master of steam vessels of 1,000 gross tons and upward on the Great Lakes and can produce documentary evidence of the fact may be examined for license as chief mate of ocean steamers, and after having had one year's actual experience as chief mate of ocean steamers of 1,000 gross tons and upward may be examined for license as master of ocean steamers, the examination to be the same as that provided for in the first paragraph of this section.

Senator Smith: Are you reading from a law?

Mr. McKeige: I am reading from their own rules. Now, this man has been for three years captain of a ship. He has been captain for three years on the Lakes. He comes here and goes one year up and down the coast on a coast-wise steamer. He takes his examination and he is the master of an ocean steamer; he has that license. That means to go all over the world and up and down the coast. Suppose he goes to China and gets caught in a typhoon in the China Sea? Ninety-nine times in a hundred his ship will founder. He is not a sailor; he is not a seaman. In the Gulf of Mexico he might get into one of those hurricanes. He has not had experience in handling ships under those conditions.

Senator Smith: What would you suggest, Mr. McKeige.

Mr. McKeige: I suggest that we have a longer period on the coast than one year.

Senator Burton: Suppose he were sailing merely from Liverpool to New York. Would he have any more experience in one of those cyclones in the Gulf or typhoons out in the Orient?

Mr. McKeige: He would have more experience in bad weather; know when to heave to. He would certainly be a better sailor.

Senator Burton: Now, for instance, in the examination of the "Titanic" it transpired that some who had hardly ever seen ice before were the officers on it.

Mr. McKeige: They were new men.

Senator Burton: No, they had been officers.

Mr. McKeige: Because they had not seen ice that does not make them sailors. They lacked carefulness.

(All of these are sad facts.)—Ed. Note.

Mr. McKeige brought out the inefficiency of our present

rulings, relative to seamanship, which from all appearance somewhat surprised the members of the committee, instigating such remarks as "Engineering pamphlet, have you, by mistake?"

However, there are many other and essential points missing on which this publication has dwelt at length in times past, all of which proves our system to be at a decided disadvantage and far from being well up to the best standard in force in other countries.

In further discussions of the law, as it now stands, including the bills in question under the hearing of the sub-committee of commerce, the Pacific Marine Review considers it of vital importance in the Bill for Safety of Navigation in Waters to either replace the term "steamer" by the term "ships propelled by steam, gas or gasoline" or to add to the term "steamer," "motor and/or power ships," which already are and will without a doubt to a still larger extent be employed in the future on oceans, bays, sounds and rivers in this and other countries. Then again do not let us omit the creation of a well defined system of load line, which is indeed an essential factor of safety, almost universally adopted by nations interested in ocean commerce and most stringently adhered to by all. This system does so far not exist in the United States and we seemingly glorify in its conspicuous absence.

Relative to the construction of ships, the remark made by Senator Perkins is of particular significance and in our opinion of paramount importance: "It seems to me if we are going to touch on the construction of the ship, you ought to make the basis of that the English Lloyds or the American Lloyds, and change the law in that respect and make it mandatory that ships will conform to that law." This is exactly what the Pacific Marine Review has advocated long ago. With all due respect to the many existing and excellent bureaus for the survey and registry of shipping, I would prefer the rules and regulations of "Lloyds Register of British and Foreign Shipping" above all others, as the first established and most excellent, composed, as it is, of a board of the most widely known and experienced shipbuilders, naval architects, engineers, steel makers and forgemasters of Great Britain, having fully proven its progressiveness. Lloyd's rules and regulations are used by maritime nations the world over and after this system most of the other bureaus have partially framed theirs, some in relation to scantlings, etc., being not nearly as stringent as Lloyds.

We regret to note that the superintendent of the Pacific Coast Steamship Company, at San Francisco, who was present at this hearing wrongly informed Senator Smith that the "Titanic" had been constructed according to Lloyd's regulations. This is not so. The "Titanic" was constructed superior to the Board of Trade rules, and although partially underwritten by Lloyds was not classed with Lloyds. The Bureau of British Lloyds, through its board makes special rules for the building of such exceptional types of vessels, viz. longitudinal water-tight bulkheads along the side of the vessel, practically providing such ships with a double skin to above the water line, which is used for bunker space, as on the S. S. "Lucania," "Compania," "Lusitania" and "Mauretania," etc. These vessels are all built under Lloyds highest class. We do not know what caused Lord Perry, the head of the world known shipbuilding firm of Harland & Wolff, at Belfast, builders of the S. S. "Olympic" and "Titanic," to differ in his views with those consistently adhered to by Lloyds.

We, however, favorably note the promptitude with which the White Star Line management has made plans for the entire reconstruction of the boiler room on the S. S. "Olympic" involving a large outlay of capital and making this vessel's hull construction similar to that of the

"Mauretania" class. Similar alterations are taking place on the new White Star liner now under construction. Whether the "Olympic" is being rebuilt for classification under Lloyds' rules is not known to us but would not the reconstruction of her boiler room conclusively prove that Lloyds' special rules for such class of vessels; yes, and for all class of vessels, are worthy of due consideration?

Bill S. 6976, Section 5, reads in part as follow:

"That section forty-four hundred and ninety of the Revised Statutes, as amended by the act of February twenty-seventh, eighteen hundred and seventy-seven, page two hundred and fifty-two, volume nineteen, of the Statutes at Large, be, and the same is hereby, amended by adding at the end thereof the following: 'Every steel ocean or coastwise sea-going steam vessel and every steel steam vessel navigating the great northern and northwestern lakes, carrying one hundred or more passengers, shall have a water-tight skin inboard of the outside plating extending not less than ten per centum of the load draft above the full-load water line, either in the form of an inner bottom or of longitudinal water-tight bulkheads, and this construction shall extend from the forward collision bulkhead over not less than two-thirds of the length of the vessel; and every such vessel shall have bulkheads so spaced that any two adjacent compartments of the vessel may be flooded without destroying the floatability or stability of the vessel. Watertight transverse bulkheads shall extend from side to side of the vessel, attaching to the outside shell. The transverse bulkheads forward and abaft the machinery spaces shall be continued water-tight vertically to the uppermost continuous structural deck. The uppermost continuous structural deck shall be fitted water-tight. Bulkheads within the limits of the machinery spaces shall extend not less than twenty-five per centum of the draft of the vessel above the load water line and shall end at a water-tight deck. All water-tight bulkheads and decks shall be proportioned to withstand, without material permanent deflection, a water pressure equal to five feet more than the full height of the bulkhead. Bulkheads of noval dimensions or scantlings shall be tested by being subjected to actual water pressure.'

"Sec. 6. That section three of the act of July ninth, eighteen hundred and eighty-six, page one hundred and twenty-nine, volume twenty-four of the Statutes of Large, be, and the same is hereby, amended by striking out the words 'three water-tight cross-bulkheads' and inserting, in place thereof the words 'water-tight skin and bulkheads;' and by inserting, after the word 'Statutes,' the words 'as amended,' so that the section shall read as follows:

"'Sec. 3. That steam vessels of one hundred tons burden or under, engaged in the coastwise bays and harbors of the United States, may be licensed by the United States local inspectors of steam vessels to carry passengers or excursions on the ocean or upon the Great Lakes of the North or Northwest, not exceeding fifteen miles from the mouth of such bays or harbors, without being required to have the water-tight skin and bulkheads provided by section forty-four hundred and ninety of the Revised Statutes as amended for other passenger steamers: Provided, That in the judgment of the local inspector such steamers shall be safe and suitable for such navigation without danger to human life, and that they shall have one water-tight collision bulkhead not less than five feet abaft the stem of said steamer.'"

Would it not appear that in the above commendations for amendments as now under discussion, the construction of vessels covers the protection and prevention from sinking of ships by collision with icebergs and not head on collisions with other vessels in trade where ice is not existing?

In reference to equipment of vessels "to best secure the safety of all persons on board," we trust that the present compulsory law of carrying drags, better termed sea-anchors, on any sea-going ship 2,500 tons gross, including twin screw ships of 2,500 tons gross, will be eliminated for every sailor knows that this cumbersome contrivance stands for naught on large vessels and its use in cases of emergencies has proved an absurdity.

If other nations can do without it, why can't we?

Relative to life boat specifications, their construction and equipment covers an unusual long and weary paragraph, in fact, too long for reproduction. Enough is as good as a feast and it is possible to have too much of a good thing.

Mr. McKeige, in this respect, justly mentions the present faulty system in vogue for the measurement of the cubic capacity of life boats by taking the extreme width and length of the boat and proposes to measure the length of boats between air tanks, as no one can occupy air tanks. How true, but what about the equipment of the boat, which naturally does occupy considerable space, as well as the air tanks in the boat. Many new ideas spring up in the minds of many, which are, however, cut down mercilessly when put to practical test.

As vastly different as the navigation is in the safe conclusion of the study, compared with navigation on board of a storm tossed and danger beset ship, so is the handling of life boats during boat drills in port and during boat drills in fine weather at sea, vastly different manoeuvres, compared with the handling of life boats during catastrophes and in particular during disasters at night and in heavy weather.

Great Britain's eminent naval officer, Lord Charles Beresford, Admiral R. N. recently and perhaps exaggeratively stated that not one day out of twelve all the year around could boats be safely lowered at sea from upper deck heights on large trans-Atlantic liners.

However, whatever the boat equipment and the facilities for launching boats may become in the near future, the chances still remain that the weather may render all human effort of no avail and therefore the life boat equipment never has or can be considered the factor of safety, which so many deem it. Nevertheless, sufficient life boats should be carried to provide for all passengers and crew in exceptional cases of disaster as of late experienced.

In the writer's opinion, the best way to secure safety of life at sea is first and uppermost, as far as all large ocean liners are concerned which carry hundreds and thousands of passengers, to have these vessels so constructed as to secure the longest possible period of floatation for a badly wounded ship, which surely is not outside the genius of our experienced naval architects to provide. Then shape our laws accordingly.

In conclusion, I sincerely trust that before anything further in the shape of legislation is introduced, the shipping community at large will be given every opportunity to discuss the nature of further proposed remedial measures.

E. F.

#### VIEWS FROM ACROSS THE BORDER

The attached letter written by Mr. W. W. Stumbles of the Department of Marine and Fisheries of Canada pertains to many interesting matters on shipping.—Ed. Note.  
Ottawa, August 23, 1912.

Captan E. Francke,

Editor Pacific Marine Review,  
Seattle, Wash.

Dear Sir: I received your letter of the 16th inst., referring to the publication in the Pacific Marine Review of the article "Aids to Navigation in Canadian Waters."

taken from the book "Canada, Her Resources, etc." I also received the copy of the magazine.

I appreciate very much the spirit you have shown in giving Canada credit for the establishment of aids for mariners in the Pacific waters. I hope your praiseworthy efforts to secure adequate aids in Alaskan waters will be successful. The mariner who has valuable property and lives in his charge should have every possible help in protecting his charge and carrying out his voyages to a successful issue.

I have observed in reading the Pacific Marine Review that you have the interests of worthy seamen and ship-owners at heart and that your journal is nobly and sincerely fighting the battles of these people. One of the best rewards that I can think of will be the consideration of your recommendations and I hope mariners and ship owners will appreciate your efforts in a substantial way by subscribing for the "Review."

About one year and a half ago I wrote the company which manufactures submarine warning apparatus at Boston enquiring if sound sent out from a vessel through the water would be reflected by rocks or icebergs in its track or course. The reply informed me that sound is not reflected under water but goes around the object in its path. It does not come back like an echo in the air. I recently noticed that Sir Hiram Maxim, of Vickers Sons & Maxim, contemplates making experiments with an apparatus used under water to convey sound that may find rocks, shoals or icebergs in the vicinity of a vessel. The Submarine Warning Company, according to the letter which I received, does not think any practical results would follow the use of such apparatus. I think it would be impossible to ascertain the depth below the surface of a submerged rock even if the sound would return.

The subject is interesting and water being such a splendid conductor of sound any apparatus which can make use of it to let the mariner know dangers ahead of him could not fail to be useful.

The legislation in the United States Senate respecting the payment of tolls and exemption of American coasting vessels has caused world wide commotion and Canada is naturally concerning herself. Premier Borden with his usual cool way of dealing with matters that concern us is waiting to ascertain what the final legislation of the United State Congress will be. A writer in the Montreal Gazette suggests that Great Britain and other nations construct a new canal at Uruguay. I think Canada would be willing to pay part of the expense. The competition between the two canals might help transportation the world over. The recent action of Congress may be popular amongst jingoes and politicians but I observe many fine Americans and principal journals do not endorse it. The New England Railway companies own steamers which they would like to employ in trade between the Atlantic and the Pacific and the Orient. Subsidized ships owned in the United States may derive benefit from the proposed levy of tolls from railroad owned steamers. The reason given that railroad owned steamers do not compete with railroads is a fallacy. Freight rates of water borne cargo are not fixed by railroad companies but by the supply and demand of ships.

The legislation is so complicated and involves so many questions that it is difficult to estimate its effect. However we naturally believe that the terms of the treaty should be religiously observed.

I read the article in the Review by Mr. Jayne and also the communication on the 50 per cent restriction and gleaned some facts new to me.

Yours very truly,

W. W. STUMBLES.

#### RECOMMENDATIONS MADE BY BRITISH COURT OF ENQUIRY IN "TITANIC" CASE AS ADOPTED BY BRITISH BOARD OF TRADE

**L**ORD MERSEY'S judgment in the enquiry into the loss of the "Titanic" has already been commented upon in the Pacific Marine Review's August issue. The court made a series of twenty-four recommendations, applying to foreign-going passenger and emigrant ships. Sections 1, 2, 3, 4 and 5 concern the water-tight sub-division applying to all passenger carrying ships on which the newly appointed Bulkhead Committee is now shaping its report.

Section 6 to and including 24 involves life boats and rafts, manning the boats and boat drills and general recommendations. On such the British Board of Trade has made the following regulations relative to safety of life at sea:

The principle that liners should be provided with enough boats and life rafts to carry every one on board is adopted by the Merchant Shipping Advisory Committee to the Board of Trade, whose report was recently issued as a blue book.

In regard to passenger and emigrant ships the committee recommend that the existing regulations should be modified so that the carrying capacity of boats and approved life rafts be sufficient to accommodate all persons on board.

This necessitates the provision of boats and life boats additional to those at present provided under the existing scale based on the gross tonnage of the vessel.

The committee further states:

"The stability and seaworthy qualities of the vessel should be regarded as of primary importance, and every provision against possible disaster should be subordinated to this consideration.

"Vessels of a registered length of more than 640 feet (as the "Titanic" was) should be required to carry an additional set of davits on each side of the vessel for each additional length of 80 feet.

"The use of a motor like boat should be optional.

"We recommend that there should in all cases, in cargo vessels as well as in passenger vessels, be a periodical inspection of ships' boats."

The above recommendations do not apply to home trade passenger ships, including cross-channel boats, or passenger ships on rivers or lakes.

#### Boat Drill For All the Crew.

The question of the efficient manning of boats was considered, and the following resolution was approved by the majority of the members of the committee:

"That the effective manning of all the boats carried on passenger and emigrant vessels can be only secured by the training and organizing of the crew as a whole. If the crew as a whole be so trained and organized, the boats can be effectively manned if there are two efficient boat hands carried for each of the boats carried under the davits or immediately available for attachment to the davits. Facilities should be given to enable all hands to prove their competency as efficient boat hands."

With regard to vessels employing lascars, the following resolution was adopted by a majority of the committee: "That lascars, if efficient boat hands, may be accepted as equal to white boat hands, but it is necessary that there be provided for each boat, in addition to two efficient lascar boat hands, one officer or one petty officer able to communicate orders to the lascars."

In the opinion of the committee, "any efficient training of passengers in boat drill is impossible, and the allotment of passengers to particular boats is sure to break down in time of disaster."

That lookout men should be provided with binoculars the committee consider inadvisable, as the field of vision would be restricted.

#### Slower Speed in Ice

On investigation the committee have found that the generally held opinion that there has during recent years been a great increase in the speed of vessels is unfounded. They suggest that in the existing rule that "every vessel shall, in a fog, mist, falling snow, a heavy rainstorm, go at a moderate speed," the words "or at night in the known vicinity of ice" should be inserted after the words "heavy rainstorm." The committee states that it is of the utmost importance that this rule should be observed.

The adoption of searchlights in the mercantile marine would, in the opinion of the committee, be "most inadvisable." They state that it is possible that a searchlight would be of value in picking up an unlighted buoy, rock, land, iceberg, or icefield, or in passing through a canal. But they enumerate the following disadvantages: "The dazzling effect on those on board the vessel and in other vessels, false security when in the vicinity of ice or other dangers, the possibility of the navigation lights of the vessel being obscured, and the danger of searchlights being mistaken for the lights of lighthouses."

In conclusion, the committee strongly urges the government to "use their best endeavors to secure that any new requirements of importance should be enforced on the basis of an international agreement."

#### Compulsory Wireless.

A sub-committee recommends that "all foreign-going vessels, British and foreign, carrying passengers from or to the United Kingdom and having on board fifty persons or more, including both passengers and crew, shall be required to be equipped with wireless telegraphy apparatus." This recommendation is subject to Parliament "establishing the conditions of a free market in the installations, or otherwise ensuring their supply to merchant vessels at a reasonable commercial cost and under reasonable commercial conditions"—a point to which they attach great importance.

They state that if Parliament compels any cargo vessels to instal wireless, the owners of the vessels should be reimbursed out of public funds. For the foreign trade an installation with an over-sea range by day of 100 miles is considered effective for life-saving purposes. Supplementary power should be provided to provide an electrical current if the ship's engines fail. Necessary receiving stations on land should be maintained as a national duty without regard to commercial returns.

The sub-committee recommends that all foreign-going vessels compelled to be equipped with wireless should be required to carry one fully qualified operator and also such assistants as will enable a constant watch to be kept during the operator's absence. These assistants should possess sufficient experience to recognize at once a danger or distress signal, but they need not be able to send or receive messages.

"We are of opinion," the sub-committee adds, "that if the breaking up of the ice and the start of its movement to the south and to the west were observed and followed each year from the beginning of March by observation vessels, equipped with wireless installations having a long range, stationed well to the north of the routes, great help could be given to the lines in distinguishing in ample time the abnormal ice seasons."

#### A Minority Report.

There is a strong difference of opinion among the members of the Board of Trade's Merchant Shipping Advisory Committee, ten of the twenty-eight members signed the report under reservations, and of these five differ emphatically from the finding that "the boats can be effective-

ly manned if there are two efficient boat hands for each of the boats carried under the davits, or immediately available for attachment to the davits."

Their report states that in no case should vessels be allowed to leave port unless there are sufficient seamen on board so as to provide at least three certificated boatmen for each life boat, of whom at least two should be qualified able seamen, any officer or petty officer counting as an able seaman. Such certificates should be granted by the Board of Trade after their officer has examined and passed such seamen only as have proved their capacity in the various operations required to properly launch a boat and to row such boat.

The president of the Board of Trade, has appointed a committee to advise him, in the interests of safety of life at sea, with regard to methods of stowing, launching and propelling ships' boats, and other kindred matters.

The reference to the committee is to advise:

(1) What are the most efficient arrangements for stowing boats in steamships of all classes, for launching them in an emergency, and for embarking the passengers and crew.

(2) Whether, and if so to what extent, mechanical propulsion can with advantage be adopted either in addition to, or in substitution for, propulsion by oars and sails.

(3) As to the question of rafts, and, in particular whether, if of approved character, they should be allowed in substitution for boats; and if so, to what extent and under what conditions.

#### ANNOUNCEMENT

In accordance with the act of Congress approved on August 23, 1912, the Bureau of Manufactures and the Bureau of Statistics, both of the Department of Commerce and Labor, have been consolidated into the Bureau of Foreign and Domestic Commerce. The work heretofore carried on by the two bureaus in commercial, industrial, statistical and economic lines will be continued by the new bureau, except the collation of internal commerce statistics, which was eliminated by Congress. The new bureau is, however, charged in addition with making investigations into the various elements of cost of production at home and abroad in respect to articles subject to duty, comparative wages and cost of living, degree of control by business combinations, and effect on prices.

Reference was made in the Pacific Marine Review's August issue, under "Aids to Navigation in Canadian Waters," to the loss of the U. S. lighthouse tender "Columbine," which should have been the lighthouse tender "Manzanita," officers and crew of which are now to be reimbursed for the loss of personal property. U. S. Congress has recently made an appropriation for this purpose amounting to \$1,642.55.

The Buxbaum & Cooley Company, electrical engineers, of Seattle, are now doing most of the electrical work for the Inland Navigation Company. They have recently installed emergency bells from wheelhouse to engine rooms on all their boats.

They also have a new range light—Fresno lens—their own manufacture, such as regularly called for. This company has installed in the last eighteen months 106 kilowatts in electrical lighting outfits, making a total of 10 installations at the present time.

They have just completed the electrical installation on the fishboat "Star," built at the Duthie Shipyard, and also on the "Harvest" for Captain McDonald.

Mr. Buxbaum has just returned from a trip to the East, where he completed arrangements for the handling of his new compass lamp and log book lamp.



### TRANS-PACIFIC BERTH

Owing to large unsold stocks of flour now held in Hongkong, the enquiry on new business for early shipment is somewhat limited, but there is a better demand for wheat for Japan. Millers, however, have difficulty in securing space on the regular line boats, as practically all of them are booked up until the closing weeks of the year, and such disengaged steamers as are bound here seem to prefer grain cargoes to United Kingdom continent, at the high rates now obtainable. There promises to be abundance of cargo offering for November and December shipments to Oriental points as the cotton crop promises to be large, as also the fish catch. The probability therefore is that rates will see a further advance.

The Waterhouse Company have just chartered another steamer, the "Verona," to load flour and lumber from Portland to Japanese ports, about the middle of September. She is 7,600 tons d. w., and her charter hire is 8s, less 4 per cent.

### NEW TRANS-PACIFIC LINE OF SHIPS

Under the above heading Consul General G. E. Anderson, of Hongkong, reports the following:

The latest phase of the trans-Pacific freight business contest, particularly that from India via Hongkong, which has been agitating the shipping world for a year or more, is to be a new line from Calcutta to Puget Sound via Hongkong by the British-India Navigation Company, which has long dominated East India coastal traffic and which recently established a new service between Burma and Japan. Plans include immediate construction for this service of four new vessels of about 10,000 tons each.

As previously indicated, the Nippon Yusen Kaisha, a subsidized Japanese line maintaining a service from Hongkong to Puget Sound ports via Japan as well as other services all over the world, established a new line under subsidy between Japan and Calcutta, asking that the new line be admitted to the "Calcutta Conference" lines. This new line was established in opposition to existing lines from Calcutta to Hongkong and Japan and was designed particularly to secure the gunny sack exports from India. Admission to the conference was refused, and after about a year's agitation the Japanese line was dropped from the conference.

It is understood that the new trans-Pacific line of this British company is being established in direct opposition to the Japanese service and the contest for this trans-Pacific trade is assuming acute form. The British line recently absorbed the Apcar line in the Calcutta-Japan trade, in addition to establishing a service of its own ships from Rangoon to Japan, trans-shipping considerable cargo for the United States at Hongkong. On July 1 the company financed its new development by issuing in London £1,000,000 (4,866,500) 4½ per cent debentures at par. The Japanese line, naturally, is supported by government subsidies and other government aid. It announces its determination to fight the contest to a finish and indicates its intention to place two more steamers, purchased recently in Japan, on the Calcutta service, in addition to the five vessels now employed, thus making three sailings a month, and plans to substitute larger ships. On the other hand the financial strength of the British concern indicates that a far-reaching contest is likely to be maintained indefinitely.

### May Shut Out Non-British Ships.

One phase of the relations of Japanese and other steamship lines in the Far East likely to have early important developments is the proposal urged by British lines and which seems to be receiving considerable sympathy from

governments concerned, to pass a British act prohibiting the vessels of all nations which shut British vessels out of their domestic or coasting trade, from carrying goods or passengers between British colonial or other British ports. As will be recalled, the reorganization of Japanese shipping legislation about 18 months ago shut all non-Japanese ships out of the trade between Japanese ports. This rule bore more heavily upon British and German ships than upon any others, though American ships were affected to some extent, in spite of the fact that Japanese ships are allowed to trade between American and Philippine ports. If the same rule is enforced against Japanese ships in British colonial and other British ports the traffic of the European, Australian and Indian lines of Japanese companies will be affected so seriously as to revolutionize the entire situation. This step by British interests has been seriously contemplated for several months and it is understood that preliminary action already is being taken in India looking to some such development.

### Increasing South American Service.

An interesting phase of the development of Japanese subsidized shipping lines appears in the announcement that the Toyo Kisen Kaisha is about to add three new steamers to its line between Hongkong and the west coast of South America. About three years ago this line, under special Japanese government subsidies which are still maintained, established a monthly service of comparatively small ships from Hongkong to Valparaiso, Chile. There was then little trade between Japan or other portions of the Far East and that portion of South America, but it was hoped that, in time, trade in either direction could be developed, hope being entertained especially that trade in Chile's nitrate exports might furnish a foundation for continuance of the service. It appears now that this export of nitrate from Chile to Japan has reached 30,000 tons annually, while there has developed a large trade in export from Japan of rice, beans, and articles of food for army supplies, as well as a largely increased trade in Japanese furniture, silks, earthenware and novelties. The vessels now on the run are not able to handle present traffic and it is expected that in addition to the present volume of trade Peru and Chile will soon be able to export material quantities of cotton to Japan.

## FREIGHTS AND FIXTURES

We publish herewith the general monthly freight report of Messrs. Hind, Rolph & Co., of 310 California St., San Francisco:

"Sept. 6, 1912.

"Pacific Marine Review, Seattle.

"Dear Sirs: The past month has not brought about any very startling developments in the tonnage situation on this coast. The main feature has been the continued and steady demand for tonnage from Portland and Puget Sound for wheat to Europe, and this demand still continues.

"As regards lumber freights, there has been a rather easier feeling in coastwise business, but off-shore tonnage is very much in demand, though there has been no volume of business done, principally on account of the shortage of tonnage.

"The most interesting fixtures are the following:  
Steamers for wheat for Europe—

S. S. 'Algoa,' U. K., Cont. or Mediterranean, 46/3.

S. S. 'Willesden,' U. K., Cont., 48/9; option Mediterranean, 50/0.

S. S. 'Strathroy,' U. K., Cont., 48/9; option Mediterranean, 51/3.

**Shipbuilders, Shipowners, Marine Superintendents,**  
**Export Merchants, Insurance Brokers, Under-**  
**writers, Marine Surveyors, Average Adjusters,**  
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**neers, and all concerned, ATTENTION!!!**

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For barley from San Francisco—  
The 'Dunslaw' gets 4s/9.  
The 'English Monarch' gets 48/9, with the option of wheat from Portland or Puget at the same rate.  
The 'Strath' gets 50/0, with the option of wheat from Portland or Puget at 51/3.  
On time charter, the 'Ockley' gets 6/0 for the round trip to the Orient, delivery and re-delivery on this coast.  
The 'Ikalls' gets 5/9 for the round trip to Australia, delivery and re-delivery San Francisco.

The 'St. Michael' gets 8/0, delivery San Francisco; re-livery Newcastle.  
Sailers—grain for Europe—  
The 'Colony' gets 42/6.  
The 'Elfrieda' gets 41/6.  
The 'Osterbek' gets 42/6.  
The 'Egon' gets 42/6 one, 43/6 two ports of discharge.  
The 'Killoran' gets 42/0.  
The 'Inverclyde' gets 42/6.  
Lumber—  
The 'Inca' gets 52/6 for Sydney.  
The 'Winslow' 65/0 for two ports in Peru.  
"Yours very truly,  
"Hind, Rolph & Co."

SHIPPING AND GENERAL FINANCE

REPORT OF HARRIMAN LINES

The following statement of earnings for the month of June, 1912, of the Union and Southern Pacific lines is given:

Union Pacific.		1912.	Increase.
Gross earnings		\$ 6,905,927	*\$ 221,675
Operating expenses		4,236,646	347,247
Taxes		309,501	33,644
Total expenses and taxes		\$ 4,546,147	\$ 380,891
Net revenue		\$ 2,359,780	*\$ 602,566
Fiscal year—			
Gross earnings		\$85,977,608	*\$3,005,499
Operating expenses		50,389,047	581,573
Taxes		4,368,789	906,756
Total expenses and taxes		\$54,758,196	\$1,488,329
Net revenue		\$31,219,413	*\$4,493,828
*Decrease.			
Southern Pacific.		1912.	Increase.
Gross earnings		\$10,540,832	\$ 60,095
Operating expenses		7,270,878	498,828
Taxes		561,738	1,192
Total expenses and taxes		\$ 7,838,616	\$ 500,020
Net revenue		\$ 2,102,216	*\$ 439,925
Fiscal year—			
Gross revenue		\$131,525,171	*\$1,095,369
Operating expenses		86,491,043	1,485,829
Taxes		5,621,239	770,891
Total expenses and taxes		\$ 92,112,282	\$2,256,720
Net revenue		\$ 39,412,889	*\$3,352,089

The following statement was given out by Judge Lovett:  
"The gross earnings of the Union Pacific and Southern Pacific systems for the fiscal years just ended were greater than in any previous year in their history, except 1910 and 1911, which, for a number of reasons were phenomenal; and this notwithstanding crop failures in Union Pacific territory, shortage of the citrus fruit crops in California and heavy reductions in rates by commissions—state and interstate. But expenses and taxes and additional interest charges for capital in the construction of branches and extensions, earnings, on which are not yet fully developed, and for betterments and additions reduced our net. In a single year taxes increased \$906,000 on the Union Pacific and \$770,000 on the Southern Pacific, and in five years have doubled, jumping from \$2,069,734 in 1907 to \$4,368,788 in 1912 on the Union Pacific and from \$2,896,501 in 1907 to \$5,621,239 in 1912 on the Southern Pacific, all of which, of course, comes off the net. The boiler inspection laws, the hours of service laws, the full train crew laws and the so-called safety appliance laws have substantially increased operating expenses, which have been further augmented by increased wage schedules, and the shopmen's

strike has been very expensive, though it has not cost us half as much as I expected when the issue was joined.  
"An unusually severe winter, followed by high water in the Union Pacific territory, as well as in Louisiana, in the spring added to our difficulties. All reports coming to me are to the effect that crops of all kinds throughout our territory are the best in years. Our properties are in splendid condition, and we are looking forward to excellent business throughout the year."

HIGH PRICES AND HIGH COSTS OF LIVING—INTERESTING AND INSTRUCTIVE ANALYSIS BY SENATOR BURTON OF OHIO

Congressional Record, Vol. 48, No. 197.  
The Pacific Marine Review has recently received from Senator Burton of Ohio a copy of a speech with elaborate appendixes, reviewing the universal advance in prices and high costs of living, discussing and analysing its causes.  
Reasoning that such advances are in every sense of the term "universal," extending throughout the countries with or without high protective tariffs, its author seeks to prove that tariffs and trusts are not a fundamental cause of present high prices, as popular sentiment proclaims.  
We are aware that many regard Senator Burton as a man of prejudicial views, an apologist for tariffs and trusts. Personally, while disagreeing with Senator Burton on many points, we consider him a man of much experience and much talent; a student, but not simply a theorist, a man consistent in his principles and not swayed by popular clamor; witness his consistent opposition to ship subsidies and his support of the British protest in the Panama Canal debates.  
Selfish and superficial thinkers are quick to condemn men like Senator Burton; personally we may disagree with him in much, but we appreciate his talents and his consistency.  
Students of economy, financiers, manufacturers and merchants will find Senator Burton's speech worth studying and it also contains interesting references, circumstances and conditions under which certain industries were established in southern California.  
Finally, I note that Senator Burton remarks:  
"If there is any salutary lesson which we can derive from this present era of the high cost of living, it is that we should practice the old time virtues of frugality and economy."  
This expresses in another form what I have often termed the "universally advanced standard of comfort and progression" and reminds me of the question I so often propounded in the columns of the Pacific Marine Review during the Russian-Japanese war: "What are the inevitable consequences of being too fond of glory? Taxes!" I fear Japan realizes its truth today.  
H. B. J.

# Chesley Tug & Barge Company and Crosby Tow-Boat Company

W. R. CHESLEY, Manager

TUGS:

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Norman Waterhouse in Charge

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### EARNINGS OF C. M. & ST. P. RAILWAY

In the fiscal year the St. Paul proper earned \$1,853,262 less gross than in the preceding year. Net fell off \$2,922,900. In the month of June gross increased by \$144,495, but net fell off \$446,973. The large falling off in net in the face of an increase in gross has some explanation, perhaps, in the fact that in readjusting tax charges, etc., June has to bear the burden of any underestimate in the earlier months, as it gets the benefit of any overestimate. Likewise it is possible that the management of the road, when there was no doubt that 1911-1912 was bound to be a bad year, spent somewhat more on maintenance, etc., than was necessary and so provided itself with room for reasonable economy later on. The earnings of the Chicago, Milwaukee & Puget Sound, all of whose \$100,000,000 of stock is owned by the St. Paul as well as most of its bonds, made a better showing than those of the parent road. For June gross increased \$209,041 and net \$81,513; for the year \$1,616,245 was the increase in gross, but fell net off \$31,760.

### SEATTLE HARBOR ISLAND TERMINALS

An important step has recently been taken towards the consummation of this widely discussed project in anticipation of more satisfactory results. With the drafting of the Harbor Island lease in its final form between the Port of Seattle, the Pacific Terminal Company and the Pacific Building Company, the latter a subsidiary company of the first, which is to have charge of the construction work, the lease has been signed by the Port Commission, authorizing the construction of terminal facilities on Harbor Island.

The Port Commission has clearly stipulated the terms upon which the construction may proceed and is now ready to abide by these terms, providing the lessees subscribe to them. The lessees have requested time extension in which to execute and deliver the bonds binding the agreement. November 1, 1912, has been agreed upon by the Port Commission as the final date for the execution of the lease by the companies so concerned as mentioned above. By October 15, 1912, the Pacific Terminal Company and the Pacific Building Company must be duly incorporated here in compliance with the laws of the state of Washington. Upon fulfillment of these conditions, it is further mutually agreed that the consummation of the lease be subject to four contingencies, which provide that the lease shall not be operative if (1) condemnation proceedings against the necessary area, at a price satisfactory to the port are not completed within six months; (2) if the bond issue, in amount and at a price satisfactory to the port, can not be disposed of; (3) if the decision of the supreme court in a case now pending shall make it illegal, or in the judgment of the port impracticable, for the port to carry out

the project; and (4) if the port is enjoined for a period of six months from executing or proceeding under the lease.

After fully meeting these stipulations and conditions, and before the actual operation of a system of terminal facilities, the lease is to become operative.

We sincerely trust that all contingencies will be favorably disposed of and that the lease will result in the rapid growth and development of Seattle's splendid harbor.

### NEW WIRELESS ACT.

The new amended wireless act, which takes effect on October 1st, 1912, makes it unlawful for all steamers, except on ocean routes less than 200 miles long, licensed to carry, or carrying, 50 or more persons, including passengers or crew, or both, to leave, or attempt to leave, any port of the United States unless equipped with an efficient apparatus for radio-communication, in good working order, capable of transmitting and receiving messages over a distance of at least 100 miles by day or night; and such steamers must also have an auxiliary power supply, independent of the main electric power plant, which will enable the sending, for at least four hours, of messages for the same distance, day or night.

The radio equipment must be in charge of two or more persons skilled in the use of such apparatus, one of whom must be on duty at all times while the vessel is navigated.

Such equipment, operators, regulation of their watches, and the transmission and receipt of messages (except as may be regulated by law or international agreement) shall be under control of the master, if a vessel of the United States; and the willful failure of the master to enforce at sea the provisions of this act shall subject him to a penalty of \$100.

This act, so far as it relates to ocean cargo steamers, will take effect on July 1, 1913, providing that on cargo steamers, in lieu of the second operator provided for in this act, there may be substituted a member of the crew or other person who shall be duly certified and entered in the ship's log as competent to receive and understand distress calls or other usual calls indicating danger, and to aid in maintaining a constant wireless watch.

An apparatus is not considered efficient unless the company installing it contracts to, and shall in fact, exchange messages with shore or vessels using other systems of radio-communication.

The master of any vessel who leaves or attempts to leave, any port of the United States in violation of any of the provisions of this act shall be liable to a fine not exceeding \$5,000, which shall be a lien upon the vessel, and the leaving, or attempting to leave, each and every port of the United States shall constitute a separate offense.

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## NEW SALVAGE LAW

An act of congress, to harmonize the national law of salvage with the provisions of the international convention for the unification of certain rules with respect to assistance and salvage at sea, was approved by President Taft on the 1st instant.

This act provides that the right to remuneration for assistance or salvage services shall not be affected by common ownership of the vessels rendering and receiving such assistance or salvage service.

The master shall, so far as he can do so without serious danger to his own vessel, crew or passengers, render assistance to every person who is found at sea in danger of being lost; and if he fails to do so, he shall be liable to a fine not exceeding \$1,000 or imprisonment not exceeding two years, or both.

Salvors of human life, who have rendered services on the occasion of the accident giving rise to salvage, are entitled to a fair share of the remuneration awarded to the salvors of the vessel, her cargo and accessories.

Suits must be begun within two years from date of rendering assistance or salvage unless there has not, in the judgment of the court, been any reasonable opportunity of arresting the assisted or salvaged vessel within the jurisdiction of the court or within the territorial waters of the country in which the libellant resides or has his principal place of business.

This act, which is now effective, does not apply to war vessels or to government ships appropriated exclusively to a public service.

This act merely gives the force of law to practices and customs that have prevailed for some time.

As to remuneration for life salvage, it can be said that our courts usually, if not always, give verdicts for larger awards of salvage where life is saved than where life salvage is not involved. This has become so common as to have the full force of custom and precedent, but the approval of the statute is wise and timely.

Regarding the provision a ship renders a salvage service to a ship of the same ownership, the fact of common ownership shall not affect the amount of the award, it may be said that this provision has for some time been incorporated in bills of lading, and so far as we know its validity has not been questioned. Such a proceeding seems to have received the sanction of cargo owners and underwriters as being just and equitable.

The bill as approved took effect as of date July 1st, 1912.

## PROPOSALS FOR OCEAN MAIL SERVICE

The United States Post Office Department is advertising for proposals for the ocean mail service between designated ports on the Atlantic and Pacific Coast of the United States and Panama. Contracts will be made for a period of ten years, services not to begin later than January 1, 1915. The following gives the schedule of routes for vessels of the classes required:

Proposals will be received at the Post Office Department, Washington, until 4:30 p. m., October 15, 1912, for ocean mail service, pursuant to the act of March 3, 1891, on the routes hereinafter described, service to commence not later than January 1, 1915. Contracts for ten years. Bond required with each bid. The right is reserved to reject any or all bids.

## Schedule of Routes.

## Vessels of the Second Class.

- No. 81. New York to Colon, bi-weekly, calling at Key West; time, New York to Colon, 6½ days. Bond, \$50,000.
- No. 82. New Orleans to Colon, bi-weekly; time to Colon, 4 days. Bond, \$35,000.
- No. 83. San Francisco to Panama, weekly, calling at

San Pedro and San Diego, at election of department; time, San Francisco to Panama, 10 days. Bond, \$195,000.

## Vessels of the Third Class.

No. 84. Boston to Colon, once every 28 days; time to Colon, 7 days. Bond, \$15,000.

No. 85. Philadelphia to Colon, once every 28 days, calling at Charleston and Brunswick, at election of department; time, Philadelphia to Colon, 7½ days. Bond, \$15,000.

No. 86. Baltimore to Colon, once every 28 days, calling at Norfolk and Charleston, at election of department; time Baltimore to Colon, 7½ days. Bond, \$15,000.

No. 87. Seattle to Panama, about twice every month, 26 trips a year, calling at San Francisco, San Pedro, and San Diego, at election of department; time, Seattle to Panama, 16 days. Bond, \$50,000.

No. 88. Portland to Panama, once every 28 days, calling at San Francisco, San Pedro and San Diego, at election of department; time, Portland to Panama, 16 days. Bond, \$35,000.

The Postmaster General reserves the right to require the steamers on each route, whenever they may continue their voyage to a port at the opposite end of the Panama Canal, to carry any portion of their mails to such port without additional compensation.

Circulars containing a description of the routes, instructions to bidders, and blank forms of proposals, with bonds, can be obtained of the Second Assistant Postmaster General, Post Office Department, on and after June 1, 1912.

FRANK H. HITCHCOCK,

Postmaster General.

## CANADIAN-MEXICAN PACIFIC LINE TO DISCONTINUE B. C.-MEXICAN SERVICE

Owing to the disturbed state of trade in Mexico and also to the difficulty in arranging satisfactory connections with the Atlantic lines eastbound, the Canadian-Mexican Pacific Steamship Co., Ltd., has decided for the present to suspend their service between British Columbian ports and Salina Cruz.

The S. S. "Lonsdale" will make one more round trip, sailing from Vancouver, B. C., about the 15th of September and from Salina Cruz about October 15th.

## WRECKS, CASUALTIES AND MISCELLANEOUS REPORTS

"SOPHIE CHRISTENSEN," schr., from Seattle, April 27th, for Callao, put into Papeete Aug. 8th in a leaky condition. She sailed for destination on Aug. 14th.

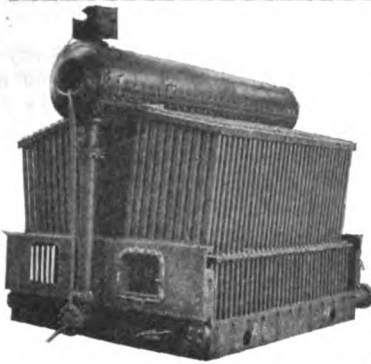
"STRATHARDLE," Br. str., at San Francisco Aug. 13th, from Baltimore, with coal for the U. S. government, while proceeding to the quarantine grounds went aground off the west end of Angel Island. She was subsequently floated with the assistance of tugs and was apparently undamaged.

"CITY OF SEATTLE," str., from Wrangel for Seattle, went ashore on Aug. 15th, two miles south of Ketchikan. She was assisted off in the afternoon by the str. "Northland" and proceeded to destination.

"WASP," str., from Aberdeen, Aug. 16th, for San Francisco, struck a sunken log in the lower harbor and commenced to fill. She returned to Aberdeen, where the cargo was discharged and repairs made.

"PLEIDES," s. s., from San Francisco, Aug. 11th, for Balboa, with general cargo, went ashore Aug. 16th about 12 miles north of Cape San Lazaro. Efforts of other steamers to float her were not successful and the wrecking steamer "Greenwood," with complete outfit, was dispatched from San Francisco, the expedition being under the control of Captain Pillsbury, formerly surveyor to the Board of Marine Underwriters of San Francisco. Re-

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	I. H. P.
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Sol Duc .....	1600
Portland Fire Boat .....	2000
Rochelle .....	600
Tacoma .....	3500
P. S. Michie .....	2000

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**S. S. H. B. KENNEDY**, Total Heating Surface, 7720; Max. I. H. P., 2630. Using only one boiler, 3860 H. S.; Max. I. H. P., 1323.

**S. S. SIOUX**, 6000 sq. ft. H. S. (— Boilers); Max. I. H. P., 1340.

**S. S. SOL DUC and KULSHAN** have duplicate engines.

**S. S. KULSHAN**, 5000 sq. ft. — Boilers—1200 I. H. P. on trial; speed, 13 knots.

**S. S. SOL DUC**, 5000 sq. ft. Ballin Boilers—1531 I. H. P. on trial; speed, 15.6 knots.

Ballin Boilers have no fittings in fire, no hand hole gaskets to leak, do not go to pieces with salt in feed water, and their workmanship and performance are guaranteed.

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ports under date of Aug. 7th were to the effect that she had been moved about 100 feet and it was expected that she would be floated within a few days. Jettison had been made of the deckload and part of the under deckload of lumber. The steamer is valued at about \$200,000, and the cargo probably half as much.

"NEWPORT," s. s., was sunk at the wharf at Balboa on Aug. 17th. It appears that part of the wharf at which she was lying suddenly collapsed in the middle of the night and two heavy cranes on the wharf fell on the steamer, pinned her down, and this caused her to fill. The steamer was loaded with a full cargo from European, eastern and South American ports destined principally for Central America and Mexico, with a small part for San Francisco. The Br. wrecking steamer "Salvor," with Captain Logan in charge of the expedition, has been sent to raise her. Values involved not known.

"EXPANSION," schr., from Tahiti, July 30th, for Valparaiso and Columbia River, put into Honolulu Aug. 18th in a leaky condition and will dock for repairs.

"MARIPOSA," s. s., from Seattle, Aug. 16th, for Valdez, ran into the wharf at that place on Aug. 22nd and then ran aground. She was subsequently floated, apparently with but little damage. The wharf and warehouse on it suffered heavy damage.

"ROSECRANS," oil str., at Vaviota, Aug. 27th, loading oil, took fire and sank. She was subsequently floated and taken to San Francisco, where she will probably be repaired. The steamer belongs to the Associated Oil Company and was uninsured.

"STRATHFORD," Br. s. s., at California City Aug. 29th with cargo of coal for the U. S. government, was caught by one of the cranes used in unloading the coal and the mainmast was carried away. In falling it struck the pilot house, doing considerable damage.

"STANDARD," ship, which arrived at San Francisco on Sept. 4th from Nushagak reports that on arrival at that port on the up trip the anchors carried away in the river and the vessel was beached. She was subsequently floated, temporary repairs were made and she was able to load her outward cargo of salmon. She sustained considerable damage.

"ACME," ship, from Baltimore, June 19th, for Seattle, is reported to have put into Montevideo on Sept. 5th with cargo heated. The ship is owned by the Standard Oil Company.

#### THE DAKE ENGINE COMPANY'S SPECIALTIES

A review of the Dake square piston engine, which operates the mechanism of the anchor windlass and the deck capstan, two important auxiliaries on shipboard, will no doubt prove of interest and value to our readers, as probably there is no simpler way in applied mechanics to obtain a rotary motion, from the pressure and expansion of steam, than is employed in this engine. Reduced to its simplest elements it consists of but two movable pieces, one sliding inside the other and both floating in a square steam tight box or cylinder, being guided in their movements by the crank on the end of the driven shaft.

In practice the inner piston has removable shoes, which can be adjusted to compensate for wear, when necessary, and the cylinder is also provided with an adjustable wedge for the same purpose. The inner piston or crosshead has cored through its body four ports, leading to the four sides which communicate with ports cut in the cover or cylinder head of engine. The engines are built upon correct and liberal lines—the wearing surfaces being ample for maximum loads. The bearing metal in these engines is made from the best quality of phosphor bronze; the manner of applying the steam to the crank, together with the quality of the metal, render them less liable to wear

than the ordinary engine, and they will last in general use for long periods. The method of adjustment is extremely simple, and when repairs are required any good mechanic can easily undertake them. Spare parts can also be shipped from the factory, and broken, worn or damaged pieces easily and quickly replaced. As an illustration of the lightness and compactness of the Dake engine (when used for stationary purposes) in relation to the horsepower developed, we may give the following particulars: The engines are made in eight sizes, No. 8 being capable of developing 30 horsepower with 80 pounds steam at 250 revolutions per minute. Size of steam pipe, 2½ inches; exhaust, 3 inches; space occupied, 33¼x50 inches, and approximate shipping weight, 2,400 pounds. A governor, automatic sight feed lubricator, pet cocks and back oiler are furnished with each engine. The Dake steam steering gear has been designed to meet the needs of tug and steamship owners for a light, compact and efficient machine for pilot house service. It consists practically of two standards, on a flat base, supporting a shaft carrying a chain wheel for the rudder chain, and also a hand steering wheel. The steering wheel shaft carries likewise a gear which is driven by a pinion on the engine shaft. The Dake engine is made to start, stop or reverse by means of a lever connected to the hand wheel, which is not keyed to the shaft, but revolves loosely on same, and it requires only a slight movement of the hand wheel to port or starboard to start or stop the gear at any point. Arrangements are also made to change the gear from steam to hand power in a few seconds, first by placing a pin provided for this purpose through the outer collar and hub of hand wheel; second, by lifting the throttle lever from wheel and sliding out intermediate pinion, which is placed on a feather key. The gear is equipped with an automatic closing device, consisting of a traveling nut, which locks into two stationary ones and closes the steam valve at the hard-over points of quadrant. These lock nuts can be adjusted to allow the correct amount of quadrant travel. The gear is furnished with a hand lever attached to throttle valve, and it is optional with the pilot to use either this lever or hand wheel for steering. An indicator is supplied, which shows the position of the rudder at all times.

The Dake steam anchor windlass is made in two sizes, either without or with the capstan attachment. The best material and workmanship is employed in the construction of these windlasses and they are very strong, durable and simple to handle.

The Dake steam deck capstan is extremely simple in construction and is unequalled for ease in handling as well as in reference to compactness and power. It has no dead center and is made for two pulling speeds, regulated by the throw of the reversing lever. The working parts being entirely enclosed, all damage or danger from dust and dirt is entirely eliminated.

In addition to the specialties mentioned the Dake engine is applicable to stationary engines, single and double drum crab winches, single drum, spur geared steam deck winch for heavy work on steamboats, also for cranes, hoists, swinging gear for derrick booms, elevator hoists, feed for sawmill carriages, disc ventilating fans, overhead chain and trolley hoists, etc. These latter hoists can be operated by compressed air if necessary, and have a capacity of up to five tons.

#### COASTWISE AND FOREIGN COMMERCE OF TACOMA, WASH., MONTH OF JULY, 1912.

Principal Foreign Shipments—		Quality.	Value.
Articles.			
Flour, bbls. ....	71,531	\$	289,743
Wheat, bu. ....	165,688		149,770
Tobacco, lbs. ....	130,581		15,670
Machinery, pkgs. ....	1,306		126,416

# The Southern Pacific Railroad of Mexico

traversing the Mexican Pacific States of

**Sonora, Sinaloa, Tepic, Jalisco**

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in  
**Cattle, Farming, Mining, Timber.**

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TWO DAILY THROUGH TRAINS

**NORTH  
COAST  
LIMITED**



**ATLANTIC  
EXPRESS**

(Northern Pacific  
Express when  
westbound)

Via North-Western Line  
from St. Paul, through  
Milwaukee, using new C.  
& N. W. Station, Canal and  
Madison Sts., Chicago.

Via Burlington Line  
from St. Paul, down the  
Mississippi, using Union  
Station, Canal and Adams  
Sts., Chicago.

COMPLETE IN EQUIPMENT

**ELECTRIC LIGHTS THROUGHOUT**

Northern Pacific Famous Dining Car Service  
H. N. KENNEDY, G. A. J. O. McMULLEN, C. P. A.  
First and Yesler Way, Seattle  
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The Line to Gardiner, the Official Entrance to  
**YELLOWSTONE NATIONAL PARK**

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The Fares Are Very Low and the Service Very High Class if You Travel Over the

## O - W. R. & N.

**O. S. L. AND UNION PACIFIC**

Here are a few of the advantages of choosing this route in making your trip East:

Steel Coaches and Electric Block Signals Protect you all the way.

Oil Burning Locomotives mean no cinders to bother you.

A Perfect Road Bed makes your train smooth running.

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Electric Lighted Trains; Electric Lighted Berths; through Sleeping Car Service to Chicago.

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Lumber, feet .....	8,143,635	177,774
Baled hay, tons.....	128	2,566
Milk, condensed, cases .....	10,565	53,999
Domestic and sheeting, bales.....	1,536	82,029
Autos .....	27	34,000
Copper bars .....	3,286	67,295
Sewing machines .....	6,384	61,972
Paraffine wax .....	7,715	40,780
Miscellaneous to British Columbia .....		52,366
Miscellaneous to Japan, China, Manila, S. America and Europe .....		304,986

Total foreign shipments.....		\$1,486,243
Articles.....	Quality.	Value.
Principal Coastwise Shipments—		
Flour, bbls. ....	33,809	\$ 149,037
Lumber, feet .....	4,937,957	52,227
Coal, tons .....	9,262	41,679
Wheat, bu. ....	99,000	89,100
Bullion, furnace paid .....		104,398
Box shooks, bbls. ....	13,017	6,605
Feed, tons .....	4,539	82,288
Hay, tons .....	552	12,306
Shoes, cases .....	24	1,249
Miscellaneous to Alaska .....		30,770
Mis. to Cal., Honolulu and N. Y. ....		107,728

Total coastwise shipments.....	\$ 695,935
Total foreign shipments .....	\$ 1,486,243
Total shipments .....	\$ 2,182,178
Previously reported .....	21,105,765

Grand total exports for 1912....	\$23,287,943
Coastwise Receipts—	
Alaska .....	\$ 423,447
California .....	605,892
New York .....	28,500
Total coastwise receipts.....	\$ 1,057,839
Foreign receipts—	
British Columbia .....	\$ 194,791
China and Japan .....	969,471
South America .....	32,000
Total foreign receipts.....	\$ 1,196,262
Total coastwise receipts.....	\$ 1,057,893
Total receipts .....	\$ 2,254,101
Previously reported .....	13,475,498
Grand total receipts for 1912..	\$15,729,599

## SHIPPING RECORD

	7 Months of 1912.	7 Months of 1911.
Deep sea arrivals, number .....	120	98
Deep sea departures, number.....	121	94
Inward registered tonnage, tons....	294,959	274,961
Outward registered tonnage, tons ..	311,938	274,324
Inward cargo tonnage, tons.....	67,365	46,292
Outward cargo tonnage, tons.....	71,525	46,314

## PORTLAND

We publish herewith the domestic and foreign lumber shipments from Portland, the domestic and foreign shipments of grain and the principal foreign and domestic imports during the month of August, 1912, compiled by the Portland Chamber of Commerce:

## Lumber Exports from Portland

Foreign		Since Jan. 1, 1912.	
August.	Value	Feet	Value
17,408,039.....	\$ 199,500	75,154,670.....	\$ 821,005
Domestic			
18,694,678.....	\$ 200,968	115,070,965.....	\$1,204,486

## Wheat Exports from Portland

Foreign		Value	
Bushels	Value	Bushels	Value
78,250.....	\$ 62,560	2,080,819.....	\$1,951,888
Domestic			
253,542.....	\$ 205,369	2,256,111.....	\$2,094,697

## Flour Exports from Portland

Foreign		Value	
Bushels	Value	Bushels	Value
57,693.....	\$ 232,831	434,610.....	\$1,733,321
Domestic			
29,923.....	\$ 121,188	250,771.....	\$1,079,317

## Tonnage Entered at Portland

	Vessels.	Tons.
August, 1912 .....	88	105,697
August, 1911 .....	85	96,235

## Tonnage Cleared from Portland

	Vessels.	Tons.
August, 1912 .....	93	119,925
August, 1911 .....	73	84,522

## Principal Foreign Imports at Portland

	August.	Since Jan. 1, 1912.
Curios and merchandise, pkgs.....	1,391	15,406
Grain bags, bales .....	151	3,422
Hardwood, feet .....	1,547,605	5,861,348
Hemp, bales .....	800	8,817
Provisions, pkgs. ....	565	11,048
Sugar, sacks .....	70	715
Sulphur, tons .....	507	5,001
Tapioca, bags .....	185	1,720
Tea, pkgs. ....	241	1,493

## Principal Imports at Portland by Water

	August.	Since Jan. 1, 1912.
Asphaltum, barrels .....	9,171	65,708
Butter, cases .....	2,158	11,796
Canned Goods, cases .....	9,636	82,796
Cement, sacks .....	299,290	2,098,113
Coffee, sacks .....	705	6,190
Electrical goods, pkgs. ....	1,262	10,527
Iron, pkgs. ....	5,608	75,403
Machinery, pkgs. ....	72	3,134
Merchandise, tons .....	2,007	25,165
Miscellaneous, pkgs. ....	31,985	288,732
Oil, barrels .....	431,353	3,003,956
Paints and oils, pkgs. ....	5,778	60,588

OFFICIAL STATEMENT OF THE CUSTOMS BUSINESS  
OF THE DISTRICT OF LOS ANGELES, CAL., DUR-  
ING THE MONTH OF JULY, 1912.

Collections .....	\$26,486.82
Imports .....	91,528.00
Exports .....	8,705.00

## Imports and Exports by Countries.

	Imports.	Exports.
France .....	\$ 2,171	
Germany .....	2,344	
Italy .....	4,644	
Spain .....	948	
Switzerland .....	1,388	
England .....	7,479	\$ 848
Scotland .....	2,399	
Canada .....	5,706	7,857
Mexico .....	7,164	
Argentina .....	6,759	
China .....	2,488	
Japan .....	43,515	
New Zealand .....	1,882	
Philippine Islands .....	1,645	
Egypt .....	129	
Other countries .....	2,877	
Totals .....	\$91,528	\$8,705

## Principal Imports.

Cabinet wood and lumber.....	\$18,689
Chemicals and drugs.....	10,398
Tea, 47,060 lbs. ....	8,745
Fertilizers, 345 tons.....	6,759
Wines, liquors, etc., 3,507 gals.....	2,913
All other countries.....	44,024
Total .....	\$91,528
Dutiable .....	\$36,290

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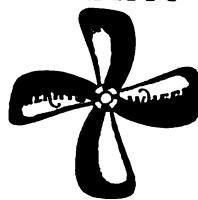
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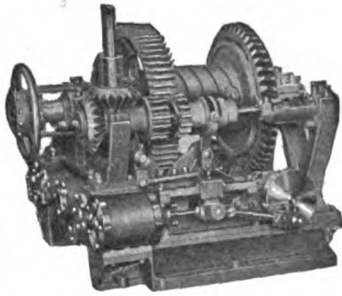
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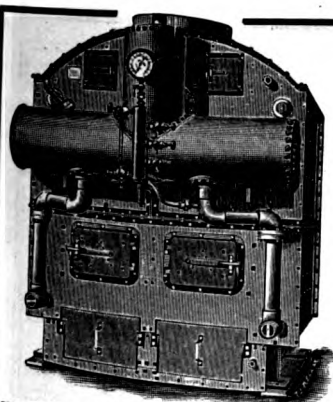
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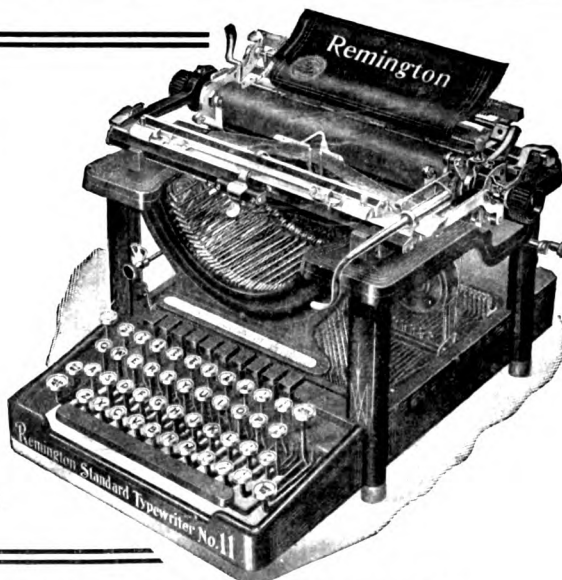
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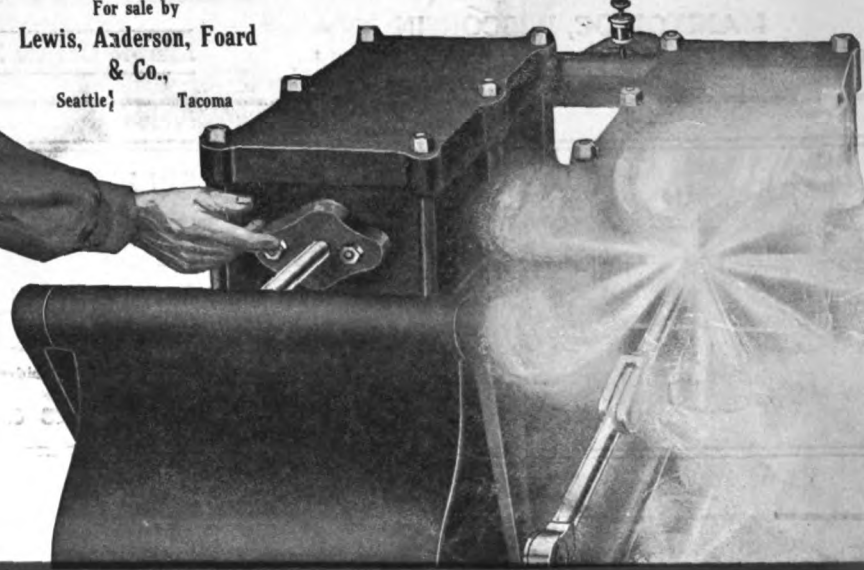
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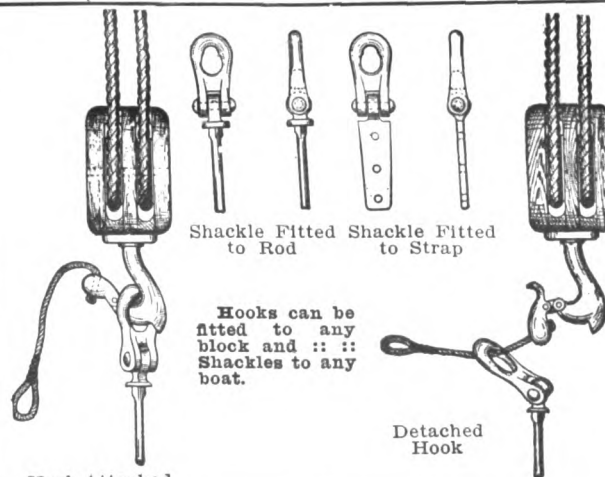
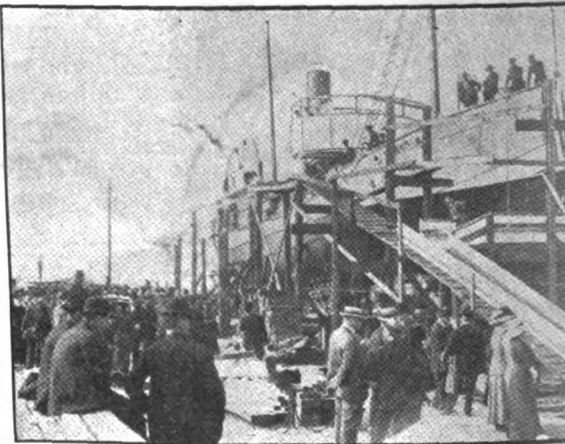
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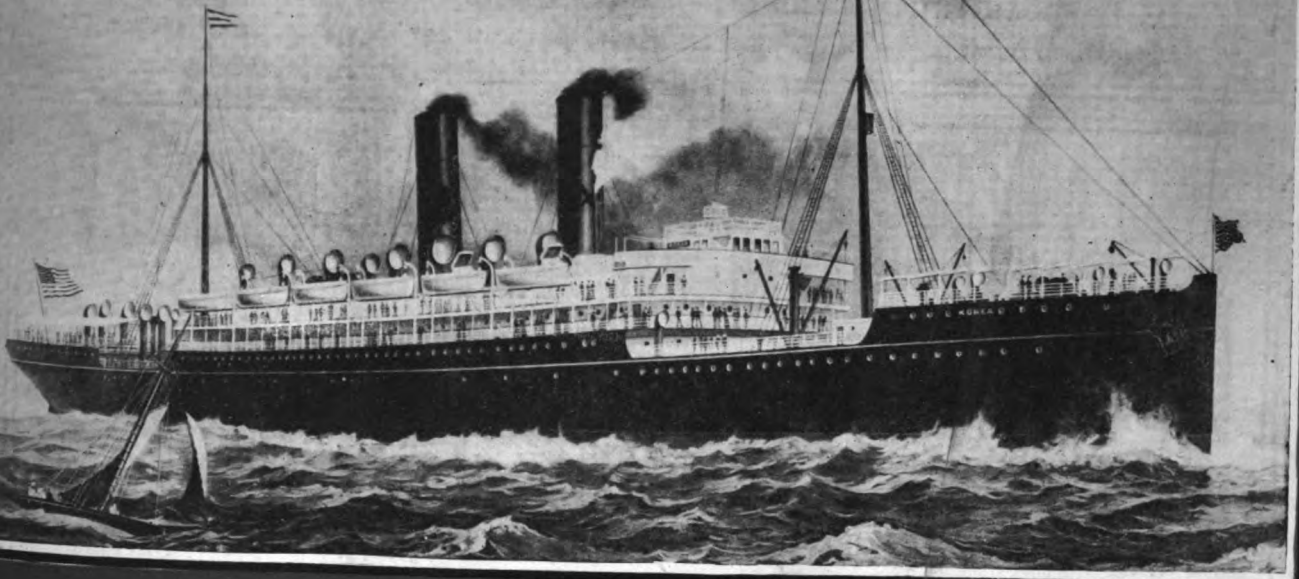
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OCTOBER, 1912

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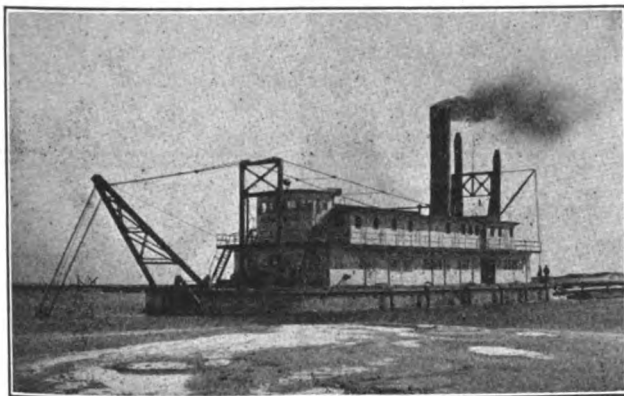
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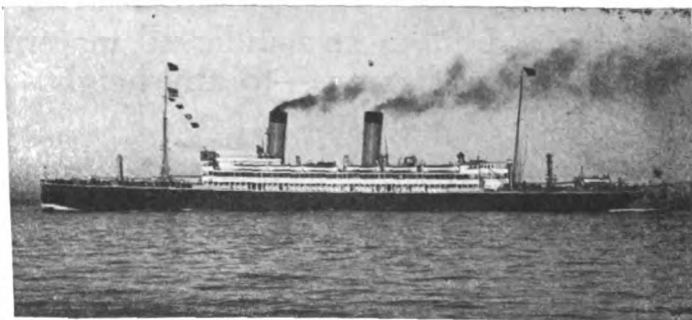
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# PACIFIC MARINE REVIEW

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VOL IX

SEATTLE, WASH., U. S. A., OCTOBER, 1912

No. 10

## NEW AMERICAN-HAWAIIAN STEAMERS

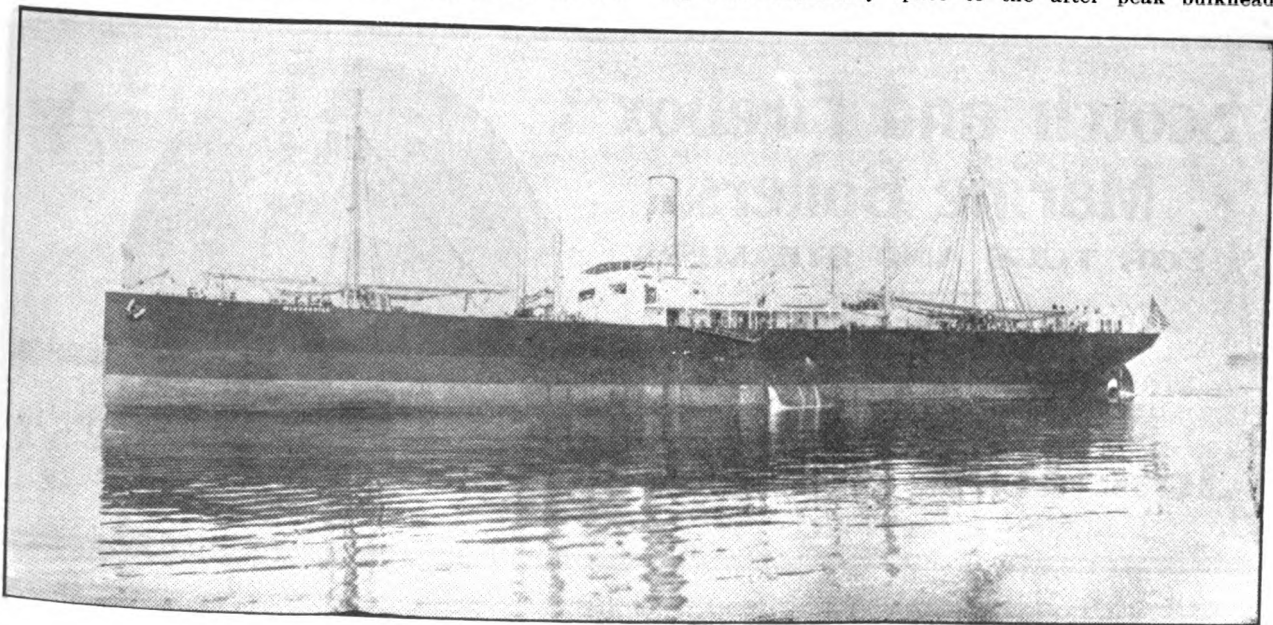
IN anticipation of additional business after the opening of the Panama Canal, the American-Hawaiian Steamship Company of New York has placed with the Maryland Steel Company an order for eight ships similar in character to the "Kentuckian" and "Georgian," now in service. The placing of such a large order with one firm is unprecedented in the annals of American shipbuilding.

The route on which these vessels are to be placed is from New York to San Francisco and Hawaiian Islands by way of the canal. Special attention has been paid to the arrangement of hatches for shipping large timbers. After the canal has been opened to the marine traffic of the world the owners will insulate the upper 'tween decks for the purpose of carrying tropical fruits, the builders having created a suitable steel house on the shelter deck ready for the installation of the refrigerating machinery.

The owners specified one radical departure from their previous boats. They desired to take advantage of the decrease in weight that the longitudinal system of framing allows and thereby increase the earning power of the

All have straight stems, elliptical sterns, three continuous steel decks with an additional steel orlop deck in No. 1 hold. The propelling machinery is located amidship, just forward of which is a deep tank with an oiltight center line bulkhead for carrying either coal, cargo or fuel oil. At each end of ship is located a peak tank for carrying fuel oil or water ballast. The double bottom extends the entire length of boat, with an oiltight center keelson, and is divided longitudinally into eight tanks, the three under the machinery space being intended for carrying feed water. Oil wells are built in to separate these tanks from the remainder, which are to be used for fuel oil or water ballast.

When it is decided to use coal instead of fuel oil in the boilers the coal will be carried in a bunker on the second deck abreast the machinery space and in the deep tank. The combined bunkers have a capacity of 900 tons. A steel shaft alley is built in the two after holds, extending from machinery space to the after peak bulkhead.



S. S. "MINNESOTAN"

ships. All eight vessels are to be built on the "Isherwood" system, the company also recognizing the advantages gained by clearer holds, besides increased deadweight.

"The Minnesotan," the first of the order to be launched, made her initial trip down the ways on June 8th, followed by the "Dakotan" on August 10th. The "Minnesotan" went on the builders' trial on September 10th and left the following day for New York to be delivered. The principal dimensions of these boats are: Length between perpendiculars 414 feet 2 inches, beam molded 53 feet 6 inches, depth molded to shelter deck 39 feet 6 inches, depth molded to upper deck 31 feet 6 inches. The vessels are built to the highest requirements of Lloyds under special survey and are classed 100 A-1. The ships will carry 9,450 tons of deadweight on a draft of 28 feet and maintain a service speed of 12 knots per hour.

The ship's stores are carried at each end of second deck over peak tanks.

The vessels are fore and aft schooner rigged, with two steel masts and four king posts. The masts have eight booms each, one on the foremast being of 30-ton and one on the mainmast of 20-ton capacity. All other booms are capable of handling 5 tons. Each forward king post is fitted with two booms and the after ones with one each; the king post booms are of 3-ton capacity. All cargo booms are of seamless steel tubing imported from the Mannesmann Tube Works, Dusseldorf. To facilitate the handling of freight, four cargo ports are fitted to the lower 'tween decks and six to the upper 'tween decks. On each deck are six large hatches with wooden covers, and in addition numerous small trimming hatches are distributed throughout on upper and second decks.



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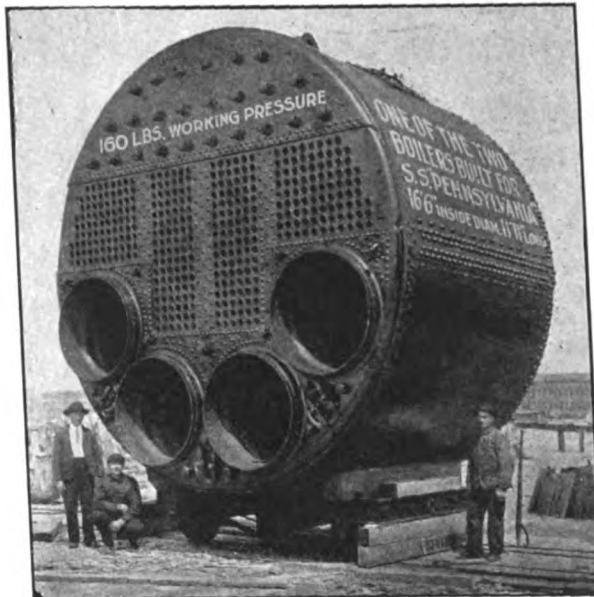
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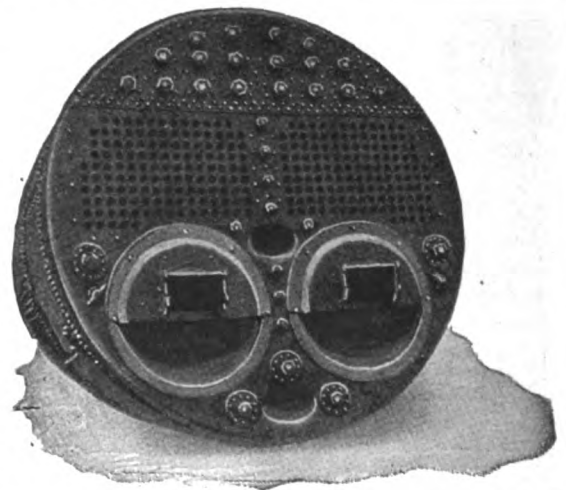
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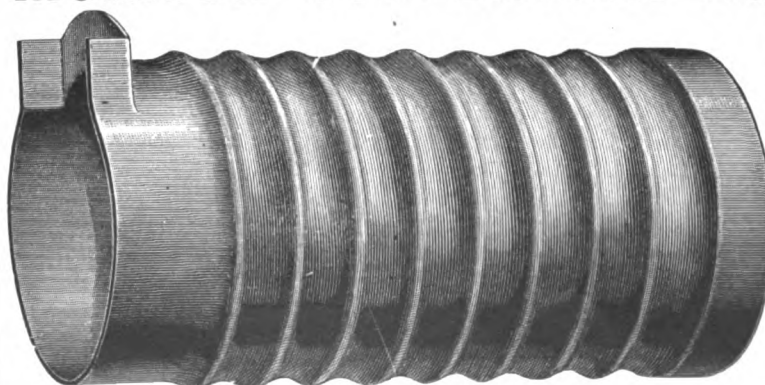
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The deck machinery is composed of a "Hyde" vertical wildcat pattern steam windlass with engine on deck below. Warping heads are fitted above wildcats. Four double-gear and ten single-gear winches with single drums and gypsy heads are installed for handling freight; the winches have 9x14-inch double cylinders. Two heavy deck capstans with 9x5-inch cylinders are fitted on deck, one forward and one aft. The steering engine is a "Hyde" geared quadrant type operated by means of a "Brown" telemotor from the pilot house, flying bridge and steering engine room. The engines are twin vertical engines, each capable of handling the rudder under any condition. The deck equipment consists of two 26-foot metallic lifeboats, one wooden 20-foot cutter and one wooden 22-foot gig. All boat davits are "Norton's" patented screw-gear type.

The accommodations for the passengers, officers and crew are large and airy, the aim being to make the quarters as comfortable as possible, as a considerable portion of each trip is in the tropics. The quartermasters, carpenter and boatswain are quartered in the forward end of upper 'tween decks. Their stores, lamp room, wash and toilet room are forward. At the after end of the upper 'tween deck the water-tenders, oilers, seamen, firemen, wash and toilet rooms are installed.

The midship house contains dining saloon and pantry, officers' messroom and pantry, two spare staterooms, store rooms, freight clerk, cooks, steward, mess boys, chief, first, second, third, deck and refrigerating engineers, and bath and wash rooms. In a steel house at after end of shelter deck the hospital with bath and spare staterooms are fitted.

On the boat deck are located four staterooms and bath, wireless room, pilot house, chart room, first, second and third officers, officers' bath and the captain's stateroom, office and bathroom. At each end of lower 'tween decks special freight rooms are bulkheaded off for bonded freight.

#### Machinery

The power plant for these ships are similar in design to that installed in the steamers "Kentuckian," "Georgian" and "Honolulu," and consists of one four-cylinder, quadruple expansion engine, three single-end "Scotch" type boilers and the necessary auxiliaries.

The main engine cylinders are 25½-37-53½ inch and 76 inches in diameter by 54-inch stroke, having piston valves throughout, and are supported by heavy box columns fitted with double slipper guides. The main air pump, two bilge pumps and an oil pump for forced lubrication to thrust block are attached to L. P. engine. The crank shaft is 15¼ inches in diameter and is in four interchangeable pieces, the cranks being set at equal angles.

The propeller, which is 18 feet 6 inches in diameter by 18 feet 6 inches mean pitch, has a cast steel hub with manganese bronze blades. The main boilers are 16 feet mean diameter by 12 feet 3 inches long, designed to meet the requirements of Lloyd's inspection rules for 215 pounds working pressure. Each boiler contains four 41-inch inside diameter corrugated furnaces. The tubes are 2¾ inches diameter and the total heating surface is 3,173 square feet per boiler.

The boilers extend through the engine room bulkhead and have all connections on the back heads in engine room. They are fitted with the "Howden's" system of forced draft and are built to burn either oil or coal as fuel. It is the intention to burn oil for the greater part of the time, but all the necessary grate bars, etc., are carried so that the change to coal may be made at any time. When burning oil the steam atomization system is used, with the necessary pumps, oil heaters and filters, etc., carried on

the forward fire room bulkhead. The fuel oil system throughout is furnished in duplicate. The donkey boiler is 10 feet diameter by 9 feet 6 inches long, built for 215 pounds per square inch working pressure and to burn oil engine room and operated by an electric motor.

There are also provided two long-stroke simplex feed pumps, a duplex fire and bilge pump, an oil trim pump, a duplex ballast pump, a fresh water pump, an auxiliary condenser with attached air and circulating pumps for port use, a 14-inch centrifugal circulating pump, two 20-ton evaporators with pump, two distillers with pump and aerating tank, a forced draft blower, a 2-ton refrigerating plant and a multicool feed heater. A drill press, a lathe and an emory wheel are installed on the starboard side in engine room and operated by an electric motor.

A system of mechanical ventilation for the cargo holds has been installed, with two motor-driven fans located in engine casing.

The Maryland Shipbuilding Company is so closely allied with the Maryland Steel Company and the Pennsylvania Steel Company, from which the first named company draws its steel construction material, that it is able to underbid other big shipbuilding companies which are not similarly allied with parent or subsidiary steel companies, in this class of large merchant marine construction. That, added to their good records and prompt deliveries, is the explanation of why this important program has practically all fallen to the Maryland Steel Shipbuilding Co.

#### MATSON NAVIGATION COMPANY AWARD CONTRACT

The Newport News Shipbuilding & Dry Dock Company has recently been awarded the contract for the construction of a single screw freight and passenger steamer for the Matson Navigation Company of the following general dimensions, for delivery about September, 1913:

Length over all.....	446 ft.
Beam, moulded .....	54 ft.
Depth, moulded, to upper deck.....	33 ft. 6 in.
Displacement, about.....	12,000 tons

The hull, machinery and equipment will be built to Class 100A Lloyd's Special Survey, and to U. S. Steamboat Inspection laws. This vessel will be arranged as an oil-burning freight and passenger steamer and will have accommodations for first class passengers in quarters amidships.

The propelling machinery will be located in the stern, in accordance with the latest practice of the Matson Navigation Company, and will consist of one quadruple expansion engine and six single ended Scotch boilers, together with the usual auxiliaries.

The Newport News Shipbuilding & Dry Dock Company now have two passenger and freight steamers under construction for the Matson Navigation Company, one 501 feet over all and the ship described above.

#### STEAMER "COLUMBIA" LEAVES FOR PACIFIC COAST

The steamer "Columbia," owned by Wilson Bros. & Company, lumber manufacturers, of San Francisco, Cal., sailed from Jacksonville, Florida, August 25th and should arrive at San Francisco, via the Straits of Magellan, about the 25th of October. The "Columbia" is to be placed on a run between Grays Harbor and San Francisco, both as a passenger and freight steamer.

This vessel will have accommodations for 50 first class passengers and 15 second class, the dimensions being as follows: Length, 253 feet over all, beam, 41 feet, moulded depth, 21 feet. The "Columbia" developed 1,280 H. P. on her trial trip and her sea speed loaded is about 12 knots per hour.

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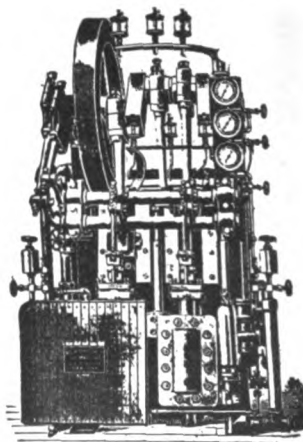
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## STEAM YACHTS

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**"CHRISTIAN X" ARRIVES IN NEW YORK**

The "Christian X" of the Hamburg American Line is the first motor-liner to cross the Atlantic, having sailed from Hamburg direct to Havana and thence to New Orleans. Her voyage has been highly successful, proving that the oil engine is entirely practicable for large steamers under all conditions.

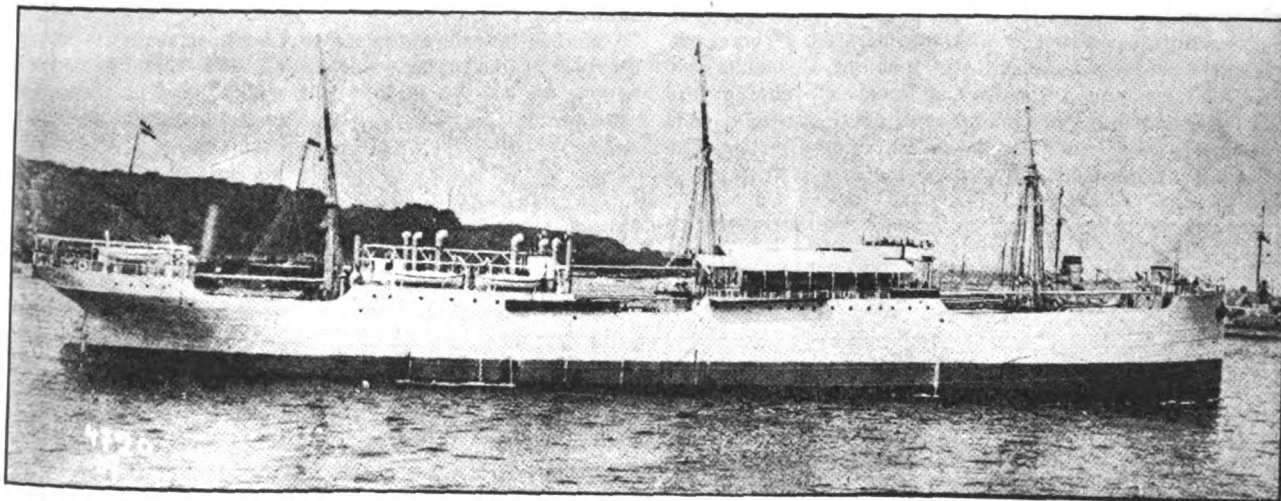
The motor liner "Christian X" was built at the yards of Burmeister & Wain, in Copenhagen, according to the highest class specifications of the Lloyds. She measures 370 feet between perpendiculars, 53 feet beam, her hurricane deck rising 30 feet above the water. She can carry 7,400 tons, her displacement loaded is about 9,800 tons, her capacity is 4,900 gross registered tons or 3,200 net registered tons.

In the new vessel, the steam engines with their boilers, furnaces and coal bunkers have all been done away with.

chines, steering machinery and the winches for handling cargo. The liners are also equipped with electrical driven carbonic-acid-gas refrigerating machines. The vessel is divided into seven water-tight compartments.

The passenger accommodations of the liner are extremely attractive. The staterooms are roomy and free from any sense of crowding. The public saloons are built with unusual high ceilings which lend them the effect of luxurious rooms ashore. There is a dining saloon, a ladies' saloon, and a smoking room luxuriously furnished in keeping with the standards of modern luxury in travel.

The "Christian X" left New Orleans September 13 reaching New York early on the morning of September 19, sailing at an average speed of 13 knots an hour. On September 14, while in the gulf stream, the motor ship was halted for five hours to carry out a series of tests in stopping, starting, etc., when she was found to be under instant control from the bridge. While sailing at full speed the "Christian X" consumed ten tons of oil per day. Since she carries 1,000 tons of oil fuel she can therefore sail for more than 100 days without replenishing her fuel, a



**STACKLESS STEAMER "CHRISTIAN X"**

The driving machinery, which is extremely compact, is controlled directly by the touching of a lever. The engine room forces, including coal heavers, trimmers, etc., have been greatly reduced, and the arduous work of the coal heavers have been done away with. The immense labor of coaling is no longer necessary. The compact machinery has made possible important economy of space which is used for additional cargo. The "Christian X," with her sister ship, "Selandia," have been added to the regular service of the Hamburg-American Line.

The motor ship "Christian X" left the River Elbe, July 23, bound for Havana. Passing out of the English Channel, a trial run of 24 hours was made on the open Atlantic, absolutely free from any currents and under fine weather conditions. The log shows that she averaged 11½ miles per hour. She subsequently met rough weather, but throughout the voyage her engines worked smoothly and without interruption. She arrived in Havana August 9th, after a voyage of 17 days, covering 4,627 miles, at an average speed of 11.01 miles per hour, with 290 tons of fuel oil in her tanks, thus fulfilling every expectation.

The "Christian X" measures 370 feet in length. Her fuel oil is carried in the double-bottom tanks, holding about 1,000 tons of oil. One of the great advantages of the motor-driven ship is the remarkable control of its machinery. The engines of the "Christian X" when at full speed may be reversed to "full speed astern" in about eight seconds. The vessel can thus be controlled directly by levers operated from the engineer's platform. The almost instant control from the bridge makes it possible to avoid collisions against which a steamship would be powerless. The exhaust gases of the engine are cooled in a special chamber and led to the outer air through a hollow mast and discharged at a height of 49 feet above the deck. All of the auxiliary apparatus of the liner is in duplicate, so that in case of accident there would be no interruption.

The Diesel engine operates dynamos which furnish electric current for operating the pumping plant, cooling ma-

distance equal to the circuit of the globe. A steamer of the same size and speed would use from 40 to 50 tons of coal per day. The "Christian X" has a crew of 46 men, only ten of whom are employed in her engine room. A coal-burning steamer of the same size and speed would require a crew of 40 men in her engine room alone.

#### **CONSTRUCTION AT YARDS OF CRAIG SHIPBUILDING COMPANY**

On September 1st, last, the Craig Shipbuilding Company, of Long Beach, Cal., delivered the steamer "Camino" to Swayne & Hoyt, of San Francisco. This steamer is equipped with Parker water tube boilers, the first that have been installed in a steamer on this coast, and on the first trip of this steamer these boilers, in connection with the machinery installed in this vessel, showed excellent economy, as the "Camino" is developing an indicated horsepower in the main engine, including steam used for auxiliary machines and steam for atomizing fuel oil, on 11-10 pounds of crude oil per indicated horsepower per hour in her regular work, and she is indicating about 1,900 horsepower in regular service.

The next steamer, No. 115, that the Craig Shipbuilding Company will deliver will be the "Paraiso," building for the Long Beach Steamship Company, and which will be handled by Swayne & Hoyt of San Francisco. This steamer is 230 feet long, 40 feet beam and 16-foot moulded depth and will carry about 1,100,000 feet of lumber. She is fitted with twin screws and so arranged with tanks that she can be put on an even keel for going up light. This steamer was launched at 9:30 a. m., Thursday, October 10, and delivery will be made about December 1.

The next steamer, No. 116, is the one building for the Robert Dollar Company of San Francisco. She will be



called the "Grace Dollar" and will be a duplicate of the "Paraiso." She will be launched in about sixty days and delivery will be made about January 1.

No. 117, building at the Craig Shipbuilding Company, for the Hammond Lumber Company, is 308 feet long, 44-foot beam, 22-foot moulded depth and will carry about a million and a quarter feet of lumber. This steamer is for May delivery.

No. 118 will be a duplicate of the steamer "Paraiso" for the Long Beach Steamship Company, and will be delivered next May.

The Craig Shipbuilding Company report that their dry dock is doing a good business and keeping busy all the while, and that they have several large jobs ahead for it.

#### NEW STEAMER FOR SUDDEN & CHRISTENSEN

An important addition to the coastwise fleet of Sudden & Christensen is the steamer "John A. Hooper," which was recently launched at the yards of the Harlan & Hollingsworth Corporation at Wilmington, Del. There are several new features about the "John A. Hooper," viz.: Steel hatches and a longitudinal bulkhead running fore and aft amidships, which, although not water-tight, adds strength to vessels of this class; also the deep ballast tank amidships, to prevent the vessel pounding herself to pieces

rigged with three masts; the fore and mizzen masts will each carry two cargo booms and mainmast four booms, all booms to be 75 feet long. She will have four sets of winches of the latest Murray pattern, steam steering gear, towing machine, Shaw & Speigle type, on poop, steam windlass forward and capstan aft. Officers, firemen and oilers to be located in poop; the officers' and crew's mess rooms, baths, wash rooms, etc., also located in poop. Deck-crew located in forecabin, wireless room on top of poop. The vessel has four hatches divided by longitudinal bulkhead dividing them in two, which gives her eight hatches, viz., two forty-foot hatches and six twenty-six-foot, with steel hatch covers screwed down on rubber gaskets.

The engine is of the triple expansion, three-cylinder type, cylinders 21", 34" and 56" diameter by 42" stroke. Two Scotch Marine boilers 14' 6" diameter by 11' 9" long, to develop 1,500 H. P. Speed to be 10½ knots loaded. Draft, loaded, about 17' 10", with about 2,000,000 feet of lumber.

Lumber is intended to be carried in packages to reduce the cost of loading and discharging. The "John A. Hooper" will leave for the Pacific coast about Nov. 1st, in charge of Capt. John I. Martin, formerly master of the Str. "Norwood."

Mr. R. P. Schwerin, vice-president and general manager of the San Francisco and Portland Steamship Company, advises us under date of San Francisco, September 27th, 1912, that "there is no truth in the report that the San Francisco & Portland S. S. Co. intends to construct two new steamers." We had read numerous accounts of the new steamers which were to run in conjunction with the "Bear" and "Beaver" in service between Portland and California ports and hence our letter to Mr. Schwerin asking for confirmation or denial.

#### THE MAPLE LEAF LINE OF STEAMERS

The United States Steel Products Company of New York inaugurated a service of steamers some years ago from New York to South America, Central America and Mexico, Messrs. Howard Houlder & Partners (now Houlder, Weir & Boyd, Inc.), New York, being the loading brokers. For over three years the connection has been extended to Victoria and Vancouver, bringing shipments consigned principally to Messrs. Evans, Coleman & Evans, composed for the most part of steel rails, structural steel and other products from the United States Steel Products Co.

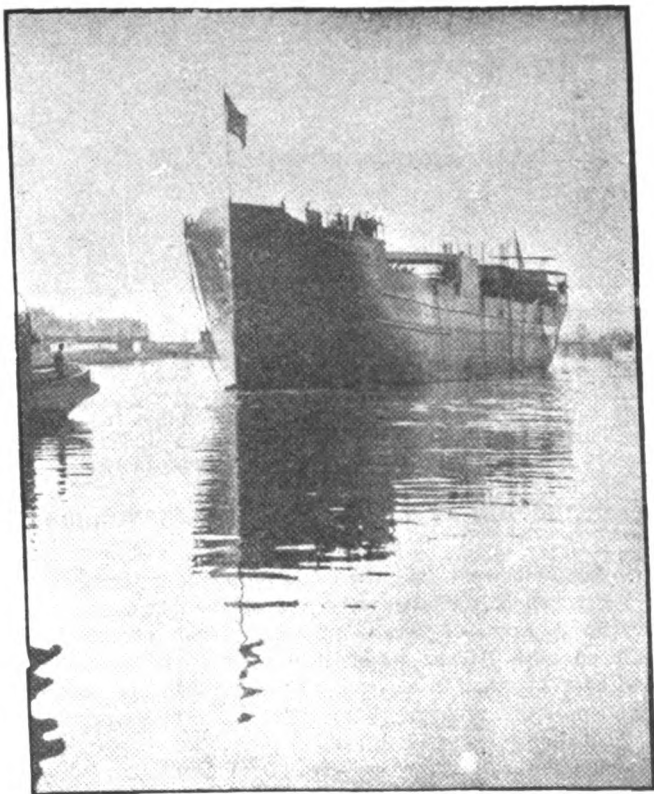
The shipments for British Columbia to commence with were insignificant, but they have climbed up to a minimum tonnage of between 5,000 to 6,000 tons per steamer.

The "Frankmount" arrived at Vancouver from Victoria on September 26th, and discharged a cargo of steel rails for Messrs. Evans, Coleman & Evans, Ltd. The preceding vessel, "Queen Amelie," sailed from Vancouver on the 23rd of September to load at San Francisco for the United Kingdom. The "Bellgrano" is at present on passage, and the "Santa Rosalia" is now loading at New York, to be followed by the S. S. "Kentra."

#### CHAS. R. MCCORMICK COMPANY INCREASING FLEET

The steamers "Multnomah" and "Merced," now under construction for the Charles R. McCormick Lumber Company, of San Francisco, will be 215 feet over all, 41 foot beam, and 16 feet depth of hold. These steamers will be equipped with Babcock & Wilcox boilers, driven by triple expansion engines of 850 H. P. which will give a speed of 12 miles per hour.

Accommodations are provided for 60 passengers. The Chas. R. McCormick Lumber Company are catering to the coastwise passenger business to the extent of making liberal and commodious accommodations in the dining saloons, staterooms and social halls of their steamers.



S. S. "JOHN A. HOOPER"

when going up the coast light. The following is a brief description of this vessel. The dimensions are:

Length over all.....	299 ft.
Length between perpendicular.....	284 ft.
Beam moulded .....	44 ft.
Depth .....	21.6 ft.

The "John A. Hooper" is built of steel with a complete steel deck, poop and forecabin, steel scantlings and all other material to be in excess of Lloyds latest rules. Double bottom, fore and aft, with fore peak will be built so they can be used to carry fuel oil. A deep trimming tank full width and depth of vessel in amidships, so that the vessel will draw 16 feet 6 inches aft and 11 feet 6 inches forward when in ballast. She will be schooner

## NAVAL COLLIER "ORION"

On the 23rd day of March, just five months and seven-teen days from the laying of the keel, the Maryland Steel Company launched the new collier "Orion," thereby establishing a new world's record for rapid ship construction. The vessel was completed in nine months and three days, the standardization trial taking place on July 10th, off the Delaware breakwater course.

She is one of two sister ships, the other being the "Jason," now nearing completion at Sparrow's Point, and has an over all length of 536 feet, a length from forward side of stem to after side of rudder post of 514 feet, a molded beam of 60 feet and a molded depth of 39 feet 6 inches. The vessels are classed A-1 for twenty years under the American Bureau of Shipping and built under the inspection of the Navy Department.

The "Orion" is built on the "Isherwood" patent system of longitudinal construction with the propelling machinery in the stern. The cargo is carried in six large holds, which are clear of stanchions and by means of the topside tanks the coal is self-trimming. Five holds are fitted with two hatches each and the forward one with but one hatch. Forward of the cargo holds under the lower deck are four deep tanks for carrying cargo fuel oil. The inner bottom under holds is also fitted for cargo oil and with the deep tanks has a combined capacity of 772,400 gallons. The topside tanks extend the length of the holds and are for water ballast only. The feed water is carried in the inner bottom under the engine and boiler rooms. The coal bunkers have a combined capacity of 2,248 tons and are fitted at each end and over the boiler room with a reserve bunker on the berth deck outboard of engine room casing. The coal bunkers were designed with special attention towards eliminating trimming. A trimming tank is built between the after peak tank and after engine room bulkhead. Two domestic tanks of 20 tons total capacity are carried on lower deck aft of engine room.

The contract requirement of handling 100 tons of coal out of each hatch per hour created such enormous stresses that a decided departure from the usual mast and booms was necessary, and the builders decided that the same design of coal handling apparatus they developed for the collier "Neptune" would be satisfactory. The builders' wisdom in regarding this problem strictly as a coal handling proposition and not as a matter of appearance, was borne out when the operator handled over 137½ tons of coal per hour at the official test. This test took place upon the completion of the 48 hour run at the Norfolk Navy Yard, the operator raising the bucket to a specified height and distance outboard of the collier's side. The coaling booms are of built-up type and are designed for handling continuously a working load of 7,500 pounds under service conditions. To handle all the buckets twenty-four "Lidgerwood" winches are installed, two of which are of special design with double drums for operating the fore and aft trolley.

The deck machinery is composed of a "Hyde" steam pump brake windlass with two gypsy heads fitted for warping and engines located on deck below. A "Hyde" capstan is fitted aft on the poop deck with cylinders enclosed in base. The steering gear is a "Hyde" right and left screw gear type, fitted with three wheels of hard wood for hand steering and operated by a steam steering engine controlled by telemotor operated from bridge.

"Fowler and Wolfe" radiators are installed throughout the ship with system draining through trap to filter box or condenser. Two "Sturtevant" direct connected generating sets of 25 K. W. capacity are installed for lighting the

vessel and operating a 24-inch searchlight. The wireless apparatus has a radius of 200 miles.

A feature that was observed on the "Orion" was that the deflection due to the load was 71 per cent less than that observed on the collier "Neptune" under similar conditions. The deflections taken for the above percentage was the maximum in both ships and was taken at the same point. The cargo on both ships at the time the deflection was read was 10,500 tons of coal, 2,000 tons of bunkerage coal, 120 tons of feed water and 130 tons of stores and crew.

Due to saving in weight of structure resulting from the use of the "Isherwood" system, the "Orion" carried the specified deadweight on a draft of 26 feet 10½ inches in place of 27 feet 7½ inches, as required by contract. This saving means an increase in deadweight of over 500 tons, or an additional earning capacity of 4 per cent on the same initial cost and the same operating expense.

### Machinery

The propelling machinery of the "Orion" represents the highest class merchant type. The two main engines were designed with special reference to economy and are of the three cylinder, triple expansion type. The cylinders are 27-46 inches and 76 inches diameter by 48 inches stroke, designed for a working pressure of 200 pounds per square inch. All cylinders are fitted with piston valves. The crank shaft is 14½ inches diameter in two pieces. One main air pump, two bilge pumps and an oil pump for forced lubrication to thrust block, are direct connected to each main engine. The main condensers are independent of the main engine framing and are located just outboard of each main engine.

As the machinery is in the stern there is only one length of line shaft. The propellers are of the three-bladed built-up type, with cast steel hubs and manganese bronze blades. They are 16 feet 6 inches diameter and 18 feet mean pitch and the trials of the "Orion" demonstrated that these wheels admirably suited the required conditions.

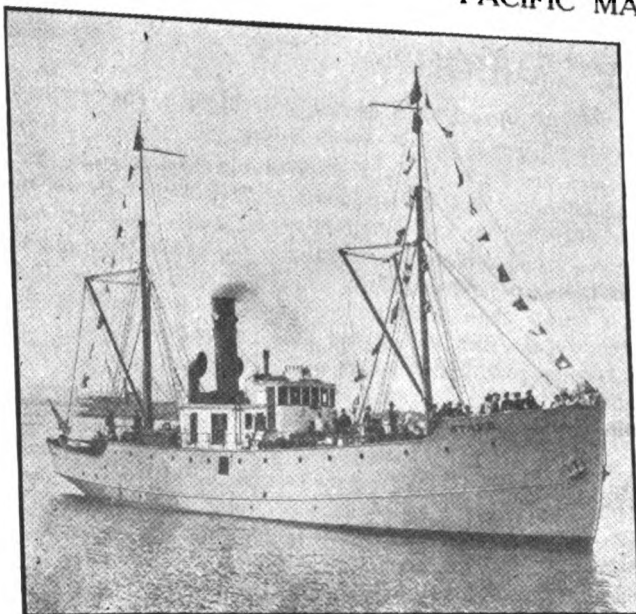
There are three double and "Scotch" type boilers operating under the "Howden's" system of forced draft. Each boiler is 15 feet 10½ inches mean diameter by 21 feet 4 inches long and contains eight 40 inch inside diameter corrugated furnaces. The total heating surface is about 18,900 square feet. A donkey boiler 8 feet diameter by 10 feet 4 inches long constructed for 200 pounds working pressure and located in bunker between engine and fire rooms, is provided for port use.

The usual number of auxiliary machines have been provided, consisting of two 14 inch centrifugal circulating pumps, three long stroke simplex feed pumps, a duplex fire pump, sanitary and fresh water pumps, two large evaporators with pump, two distillers with pump, an auxiliary condenser with attached pumps for port use, a pressure type feed water heater, two forced draft fans and a two ton refrigerating plant. As the double bottom carries cargo oil or ballast there are two duplex pumps in engine room cross connected to either service.

The 48-hour endurance trial run of the "Orion" which was started July 10th, 1912, proved very successful, the machinery running smoothly throughout and showed the following results:

### Average for Forty-eight Hours

Revolutions per minute, average both engines, 95; average steam pressure at boilers, 195 pounds; average steam pressure at engines, 192 pounds; average air pressure in ash pit, 1 inch water; average I. H. P. both main engines, 6,943; average speed for run, 14.468 knots.



S. S. "STARR"

The steamer "Starr," built at the yards of J. F. Duthie & Company, Seattle, and owned by the San Juan Fish Company, recently ran a successful trial trip, developing a speed of 12 knots an hour.

This vessel is of the double-deck type, especially designed for the halibut trade. She is 140 feet long, 25.6 feet beam and 13.6 feet depth of hold. The vessel is equipped with a triple expansion engine of 600 horsepower and the Moore & Scott oil burning system. She has a capacity of 410,000 pounds of halibut, a steaming radius of 4,000 miles and can carry 900 barrels of fuel oil and thirty tons of water.

The "Starr" cost approximately \$90,000. She will replace the steamer "Grant," formerly the United States revenue cutter "Grant," which was lost in Alaska waters December 28, 1911.

The steamer's compartment for storing fish is constructed in the nature of an enormous refrigerator, being lined with two-inch plank, between which are layers of cork and charcoal, keeping the temperature constantly near the freezing point.

The steamer "Starr" as accepted by the builders is a credit to the shipbuilding yard of J. F. Duthie & Company.

#### IMPORTANT CONSTRUCTION WORK ON PACIFIC COAST BY LIGHTHOUSE DEPARTMENT

Alki Point, Puget Sound.—This structure is directly across the bay from the city of Seattle, and marks an important turning point for vessels bound from Seattle to Tacoma. The tower and fog signal will be of concrete and the keepers' dwellings of frame construction. Oil-vapor illumination and modern fog-signal apparatus will be installed. This work will probably be completed in the spring of next year.

San Pedro Breakwater, Cal. This structure is being built on a concrete block at the outer end of the breakwater, and consists of a heavily braced structural steel framework with concrete plaster curtain walls, and is designed particularly to admit of realignment should unequal settling of the breakwater develop in the future. Quarters for keepers, an oil-vapor flashing light, and a first-class compressed-air siren will constitute the equipment. The structure is fireproof throughout, and will probably be completed next spring.

Kilauea Point, Hawaii.—This will be the principal land-fall light on the north shore of the island of Kauai, Hawaii. The tower will be of re-enforced concrete with cast-iron

stairs and fittings. A powerful double-flashing oil-vapor light will be installed in a first-order lantern. The metal work for this structure has been fabricated in this country and recently shipped to Hawaii, and the light will probably go into commission within the following year. The site is rocky and difficult of access, and special equipment and tramway for handling supplies will also be installed.

#### AIDS TO NAVIGATION

The inspector of the 17th District of the Lighthouse Service at Portland, Ore., advises us that two large combination gas and whistling buoys are now in transit to this district.

One of these buoys will be established about three-quarters of a mile outside the Columbia river bar on the entrance range, in lieu of the present whistling buoy. The other will be established in mid-channel on the entrance range, but just inside the shoalest part of the bar.

The weight of one of the buoys without the moorings is 21,100 pounds; draft of water about 22 feet; height of focal plane above the water  $16\frac{1}{2}$  feet. The whistle is 10 inches in diameter. Each buoy is furnished with two high pressure gas containers, containing together 2,120 cubic feet of acetylene. This is sufficient gas to run the light about a year. The lantern will be fitted with a ground dioptric Fresnel lens 375 mm. in diameter, and the effective candlepower of the light will be approximately 450. The light period will have a duration of 3-10 second, followed by a dark period of 2.7 seconds, thus giving 20 flashes per minute.

Within the past few months three other combination gas and whistling buoys of a different type and somewhat larger than that referred to above have been established in this, the 17th Lighthouse District. One of them was placed off Orford Reef at Cape Blanco on the Oregon coast, one outside the bar off the entrance to Willapa Bay, Wash., and the last off the point of Waddah Island, entrance to Neah Bay, Straits of Juan de Fuca, Wash. These are the automatic generating acetylene buoys, and weigh about 11 tons each without the moorings or charge of calcium carbide. About 2 tons of carbide were placed in each, and the buoys should operate without further attention for approximately one year.

The candle power of the light on these buoys is about 820, and the focal plane is  $20\frac{1}{2}$  feet above the water. The light period is 5 seconds followed by a dark period of 5 seconds.

Mariners have been enthusiastic in their praise of these aids to navigation. One reported that he had picked up the Orford Reef gas and whistling buoy when 14 miles away from it, but, of course, in this case his "height of eye" was somewhat greater than usual.

#### RULE OF RESCUE AT SEA

A notice has been issued by the British Board of Trade giving effect to Lord Mersey's recommendation in his report on the loss of the Titanic, that the attention of masters of vessels should be drawn to the fact that it is a misdemeanor or not to go to the relief of a vessel in distress when it is possible to do so. Masters who fail in their duty in this respect are liable to punishment by fine or imprisonment for two years' hard labor.

One of our subscribers, a marine engineer, writes: "Of course I am interested in the life boat controversy. I would like to ask those people who are shouting for more life boats, how much use were the life boats on the S. S. Santa Rosa, or the S. S. Valencia or the schooner Washington, on the Columbia river bar?"



## THE DIESEL ENGINE—ITS EFFICIENCY AND RELIABILITY

We regret we cannot altogether agree with the remarks made in the *Shipbuilding Notes*, on page 291 of our contemporary (Sept. 21st issue) "*Shipping*" Illustrated, in regard to the cost of trials, etc., of the Diesel Engine. Our contemporary says: "There are instances in which the difference between the estimates of the cost of trials, and the actual costs is very great, but they are the exception to the rule" (this is speaking of steam engines). On the other hand with Diesel oil engines the costs of trial is incalculable. The trials might run into three or four months, and in that time there would probably be a heavy bill for renewals and the making good of defects." The *Pacific Marine Review* would be glad to learn, and would be much interested to know of any instances that have occurred, where the facts would sustain this remark.

Again "*Shipping*" Illustrated says in connection with the Diesel engine: "Moreover there is a certain inevitable expenditure in the beginning which has not been faced with steam engines, especially reciprocating steam engines of designs and constructions which have been proved over and over again in service. For instance in the case of a four-cylinder oil engine, it does not mean that only four cylinders have to be made. The number made would probably be eight, and it might before the job was through run up to a dozen. That means money, and some of the cost has to be borne by the engine. But the completed work does not bear anything like the total additional cost."

We may remark in this connection, that if eight cylinders or more have to be cast to secure four good ones for an engine, it is *prima facie* evidence of very poor and inefficient foundry practice. We are aware that in the cooling of cylinder castings, the difference in shrinkage of the cylinder proper and the water jacket occasionally makes the casting a "waster," but with proper care taken in the design and patterns, and with competent moulders, and a suitable mixture of metal, the moulds may be "run" and the resultant casting being a "waster" will be the exception, not the rule. Again we may state that in a compound or triple expansion reciprocating steam engine exactly the same difficulties in regard to the steam jacketing have to be overcome in the foundry, and a "waster" occurs only very occasionally. Therefore we cannot agree with the remarks of our contemporary, and are inclined to think they have been misinformed on this subject, as possibly some of the following authenticated facts may tend to show:

The Diesel motor is somewhat of a cross between a hot air and oil engine, and is based on the principle that the air portion of the explosive gas mixture is compressed, and incidentally heated by the motor before the oil or other liquid fuel is introduced, thereby causing the ignition and explosion under conditions which are claimed to insure a higher efficiency of the fuel than any other motor. The terms "Diesel" and "Semi Diesel" are being generally applied to engines using crude oil as fuel, notwithstanding the fact that the name "Diesel" refers to a certain principle of construction, perfected and patented by Dr. Rudolph Diesel of Germany, and described by him as follows: "The Diesel engine is the only engine which converts the heat of the natural fuel into work in the cylinder itself without a previous transforming process, and which utilizes it as completely as the present advancement of science permits."

The original Diesel cycle may be described as follows: Pure air is drawn into the cylinder and this is compressed to a point at which the temperature of compression is equal to, or in excess of, the combustion tempera-

ture of the fuel. The compression is from 350 to 550 pounds per square inch. Just as the piston starts on the next outward stroke, the fuel is forced in under a pressure slightly higher than that in the cylinder. The high temperature of the compressed air causes the entering fuel to take fire and burn as it enters the cylinder, just as gas burns when issuing from an ordinary gas burner. This does not increase the pressure in the cylinder and no explosion causing any great increase of pressure takes place. The pressure, however, does not fall so rapidly during the admission of the fuel as it rose during the compression and the expansion curve is therefore slightly higher, in pressure, than the compression curve. The exhaust takes place at a pressure near that of the atmosphere and very little power is lost through the exhaust gases, escaping at a comparatively high pressure, as they do in the four-cycle motor.

The Diesel crude oil engine is now definitely under consideration for all types and classes of marine craft. For small vessels the advantage lies in the safety afforded by the use of crude oil as compared with lighter oils. This engine is now being used by many of the principal navies of the world for submarine vessels and designs are already under way for comparatively large engines for torpedo boats, destroyers and other similar craft. A few months ago the "*Vulcanus*," a vessel of 2,000 tons displacement, 196 feet long, equipped with six-cylinder, four-cycle, single-acting, reversible Diesel engines, was put in regular service between Holland and Borneo. This engine is about 500 brake horsepower capacity at 180 revolutions per minutes; the fuel is a crude oil from Borneo, and the quoted guarantees are 0.42 pound per brake horsepower per hour at full speed, 0.44 pound at three-quarters speed, and 0.5 at half speed. In a recent trip the "*Vulcanus*" covered 3,312 miles in nineteen days and three hours; the average speeds varied from 6.86 to 7.80 knots. It is on record that the average consumption for this ship amounts to one ton of crude oil fuel per 100 knots.

The technical journals of recent date record very many such installations, and among these Russia is credited with at least four freight vessels of 1,000 horsepower each, and two 14-knot gunboats of the same horsepower rating. In December, 1911, two vessels nearly four hundred feet long and of seven thousand tons capacity, each fitted with Diesel engines of 2,500 horsepower and with two auxiliary Diesel engines aggregating 500 horsepower were being tried out in European waters.

The attention of marine engineers is especially directed to the most recent developments in the oil engine field—the Junker's oil engine. These engines for the freight vessel of the Hamburg-American Line, are of the twin-tandem type of 1,600 total shaft horsepower each; these engines operate on the two-cycle principal, and through the introduction of two pistons into each cylinder double action is obtained.

An interesting comparison will shortly be placed before the public by the British admiralty, which proposes to try out side by side in a twin-screw cruiser, a steam engine and a Diesel engine of 6,000 horsepower rating. The resultant data obtained from this test and trial will be of absorbing interest and extremely valuable to marine engineers and architects, as well as shipping interests generally. A destroyer recently ordered by the British admiralty will have on each shaft a steam turbine and a Diesel engine. The plan is to operate the turbines when high speeds are required, but under cruising conditions when the speeds are low, owing to the poor economy of the steam turbines, the Diesel engines will be used. The



combined economy secured from this arrangement will also be exceedingly interesting. One of the outstanding features of the development of this engine is the fact that there seems to be a marked tendency to adopt the two-stroke cycle for marine work, and with the introduction of the Diesel engine on shipboard, the discomforts of the stokehole are very greatly reduced, the labor required much less than under present marine conditions and the character of the labor very much improved.

Although the existing types of steam engines for marine propulsion probably will not be very rapidly displaced in the larger ocean-going vessels, yet the crude oil engine seems to be especially adapted for such services as has been previously indicated. The quantity of fuel needed, approximates one-third of that required for the steam engine, hence the radius of action for a given weight of fuel is very greatly increased; the boilers can be eliminated and the space utilized for carrying cargo. It has been reported that in the case of a freight vessel of 2,700 tons burden, a saving of over \$19.00 per day was made by using oil at approximately \$11.00 per ton, instead of coal at about \$3.00 per ton.

Tar oil has become a more or less common fuel for Diesel engines of 600 or 800 horsepower rating, and it is understood that tar is used in at least one engine of 4,000 horsepower. Recent experiments indicate that both thin gas retort tar and thick coke-oven tar can be used by injecting into the cylinder a small percentage of light oil to assist in igniting the tar. It is claimed that a wide range of tars can be used in this manner without producing smoke or appreciable residue. In a number of tests carried out at the Korting Works, about 2 per cent of the ignition oil was added at full load and about 13 per cent at half load. Reports indicate that an order has been placed for a 600 horsepower Diesel engine to operate with raw tar.

The voyage of the oil motor ship "Selandia" has been followed with much interest in England and elsewhere, and has in every respect turned a successful experiment. The vessel is the first passenger and cargo carrying ship which has made so long a journey, entirely independent of the use of steam power. The voyage recently completed covered over 21,700 miles, in which the vessel stopped or called in sixteen different harbors; and as the vessel encountered all kinds of weather during the passage from Siam, the test of the qualities and reliability of the engines was very severe.

In spite of the fact that the vessel and engines embody many new principles, and was strange to the operating marine engineers, only one slight adjustment of the exhaust valve, involving a quarter of an hour's stop for the engines while at sea, was reported to be necessary during the entire trip. This speaks for itself and has proved the value of the fuel admission arrangements, as it is these parts that are most likely to become disarranged and cause trouble, and the fact that none appeared seems sufficient proof that these motor vessels may fairly compete with steam engines in certain classes of ships. In all matters of fuel consumption, ease of maneuvering and the general behavior of the engines, the vessel far exceeded expectations. Very few alterations in design are suggested by the experiences of the engineers on the maiden trip and these relate chiefly to the heat radiated from the exhaust which affected the temperature of the engine room. This trouble has been corrected on the "Selandia" by the installation of supplementary fans and ventilators, and will be avoided in future boats by the natural cooling of the exhaust chambers

above deck. The fuel consumption fell considerably below that estimated by the builders; on the home voyage the "Selandia" averaged ten nautical miles per hour on a consumption of 8.5 tons of oil per day of twenty-four hours and the charge of Bornean oil taken on board at Singapore will be enough to enable the vessel to go out and home again without rebunkering. The owners find that suitable oil can be purchased at much more reasonable rates at Singapore than in any European port. The opening up of the cylinders, gears and bearings at Copenhagen on the completion of the round voyage, and the inspection by Lloyd's representatives at that port, showed that everything was in perfect order and that not any of the various parts of the engine were worn or suffered undue strain.

The temperature of the water cooling the cylinders at no time exceeded 40.5 degrees Centigrade, although 53 degrees had been calculated for as a working maximum. The voyage of the "Selandia" has demonstrated the fact that 9,400 tons of cargo can be carried a distance of upwards of 21,700 miles on a consumption of  $8\frac{1}{2}$  tons of fuel for every twenty-four hours, with a total engine-room crew of ten men and three boys, and this without any sacrifice of reliability, efficiency, endurance and maneuvering power of the engines and ship.

In conclusion, it will not be out of place to call attention to the very economical use of the Diesel engine for central station work and as a substitute for sub-station converting machinery and such stations are already in operation in London, England. In this connection the increase in the size of the Diesel engine is worthy of note. Engines of a few hundred horsepower are quite common in Europe. In Swiss electric stations, Diesel engine units of 2,000 horsepower are now in use and it is stated that the development of the large size Diesel engine has been so successful that it will not be long before 1,000 horsepower developed in one cylinder will be considered nothing extraordinary.

One company of world-wide reputation is at present considering more than 2,000 horsepower in the single cylinder of Diesel engines. It is further stated that engines of this type, with four cylinders, developing 1,000 horsepower each, can be made as light as the corresponding triple expansion steam engine and there is at least one company that is prepared to supply and install plants of large power capacity at a cost not exceeding and in some instances less than that of the corresponding steam turbine installation of the same power and capacity.

#### THERMIT PROCESS OF WELDING

Atlin Construction Co.,

Prince Rupert, B. C., October 1st, 1912.

Pacific Marine Review, Seattle, Wash.

Gentlemen: As a subscriber I read with interest the report of welding by the Goldschmidt Thermit process, published in the September issue of the Review.

When we erected our refrigerating plant at Prince Rupert we used this process in making 1,600 pipe wells for our sharp freezers, and under test in 1,600 wells, at 300 pounds air pressure, we only had two leaks, due to fault in material and not to the Thermit process.

To practical men it is unnecessary to add further commendation.

I may, however, say that this process, which is so easily and simply applied, has the advantage of saving in cost and labor over the usual fittings.

Yours very truly,

ATLIN CONSTRUCTION CO., LTD.  
W. H. Collins, Manager.

## USE OF FUEL OIL IN NAVAL SERVICE—EVENTUAL TRANSLATION OF NAVAL SUPREMACY TO THE UNITED STATES

As the Pacific Marine Review has for years contended, the increasing use of fuel oil, and the great advantage of almost inexhaustible domestic supplies, will tend to translate naval supremacy from Great Britain and Europe to the United States.

The protection and delivery of fuel oil supplies is to all European countries, except Russia, an additional problem to the protection of food supplies.

When the Panama Canal is completed the United States will be relieved from further immediate large national expenditures and we shall then urge and continue to urge the immediate construction of a navy to foster and protect the international commerce which the canal will undoubtedly develop, as well as the adequate protection of our present Trans-Pacific commerce, and we shall not be satisfied until the United States reaches, and retains by a permanent policy of naval construction, the second, if not the first position in international naval strength.

We must remember that individually no nation has resources equal to those of the United States, to which must be added the fact that, in contradistinction to the first class nations of Europe, it is not burdened by payment of interest on a large national debt, begotten of ancient wars.

It is interesting to note that the Navy Department has caused the Department of Justice to begin suit against some of the California railroad companies to vacate their patents to about 37,000 acres of oil land in the Elk Hills region in order that the tract may be used as a source of oil supply for the navy. The Government oil reserve is estimated by the statistics of the Bureau of Mines at approximately 250,000,000 barrels. It is the estimate of the naval engineers that the extreme annual need of the navy in fuel oil will not exceed 10,000,000 barrels of oil for the next twenty-five years.

The "Nevada" and "Oklahoma," the battleships authorized in the appropriation for the fiscal year 1911-12, as well as the "Pennsylvania," authorized in the appropriation for 1912-13, will burn oil exclusively. The "Arkansas" and "Wyoming" were equipped with auxiliary oil burners under their boilers; so will be the "New York" and "Texas." The "Florida," "Utah," "North Dakota" and "Delaware" have auxiliary oil supply and can convert from coal to oil fires at a moment's notice. These vessels all carry about 400 tons of fuel oil, which is less than one-fifth of their total fuel supply. The three newer ships above mentioned will have no coal bunkers whatsoever. Regarding the advantages accruing to the navy through the exchange of coal for oil as ships' fuel, Engineer-in-Chief Hutch I. Cone said recently:

"Fuel can be taken aboard more rapidly and without manual labor and without interruption to the routine of the ship. The problem of fueling at sea is solved. Steam for full power can be maintained as readily as for low power. A vessel burning oil is capable of runs at full speed, limited in duration only by the supply of fuel. There is no reduction in speed due to dirty fires or to difficulty in trimming coal from remote bunkers or to exhaustion of the fireroom force. There are no cinders and the amount of smoke can be controlled.

"The weight of space required for boilers is reduced—first, by the reduction of heating surface required, and, second, by the shortening of firerooms. Consequent on the reduction in heating surface is a decrease in the weight and cost of boilers. Coal and ash handling gear is eliminated. This renders unnecessary the piercing of the hull for coal trunks and discharges from the ash pro-

oil is much easier than of coal, and will result in a much cleaner ship, with consequent increase in time available for drills. The mechanical supply of fuel to the boilers gives a prompt and delicate control of the steam supply, permitting more sudden changes in speed than with coal, which is a tactical advantage. The nature of fuel oil permits the utilization of remote portions of the ship and of constricted spaces for its stowage."

Those in close touch with the British Admiralty report a marked speeding up of activity in connection with the adoption of oil fuel. Tenders have been taken for an oil tanker of nearly 9,000 tons dead weight and 430 feet in length, to be fitted with two-stroke Diesel engines, and contracts have been placed for two other tankers, one to be built at Devonport and the other at Barrow, the capacity of each to be about 1,000 tons. Even more noteworthy is the proposed adoption of Diesel oil engines for auxiliary purposes. In connection with electric lighting, for instance, Diesel engines up to 100 horsepower are to be almost exclusively employed in the new warships. Then there is to be a marked increase in the number and size of the motor boats carried. To supply the motive power for all those new vessels a considerably larger supply of fuel oil will be required, and for this supply the Admiralty is drawing largely on the Scottish mineral oil companies. Recently orders aggregating some 200,000 tons were given to the four principal refining companies in proportion to their output. The price paid is approximately 2½d (4½ cents) per gallon, which is undoubtedly quite a satisfactory one, in view of the fact that the Admiralty will take delivery of the oil as it is offered and pay cash for it. This oil is delivered for the most part at Granton, Grangemouth, and the new depot in the neighborhood of Rosyth. There are reports of further important developments on the east coast of Scotland in connection with the storage of oil fuel for the Admiralty.

### SHIP'S DIRECTION RECORDER

#### A New Safety Device.

Considerable interest has been aroused in Liverpool by a demonstration of the working of an invention for use in ships, particularly in time of fog, to show the direction of sounds such as those of the sirens of other ships.

The apparatus, which is the invention of two brothers named Hodgkinson, consists of a "drum" to receive the sound waves and an indicator. The "drum," which is 9 feet by 5 feet, is placed aloft, where it cannot be affected by sounds on the deck, and it is connected electrically with an indicator, which is placed in such a position that it can readily be seen by the ship's officer on duty. The receiver consists of a number of units, each of which receives sound waves from a particular direction. Though sensitive to sound waves, they are not affected by ordinary mechanical vibrations. By means of an electrical device a sound wave from a particular direction causes an electrical lamp in a particular position on the indicator to light.

#### Track Shown by Light.

The position of the lighted lamp shows the position that the ship which siren is sounding occupies with regard to the ship which carries the apparatus. The lamp remains alight until seen by the officer on duty, who can then switch it off. If the other vessel is moving different lamps light in succession, showing the vessel's course.

It is claimed that the apparatus indicates the direction in which a vessel blowing a fog horn is travelling—wheth-

pellers and ash ejectors. The stowage and handling of her she is going ahead, astern, or on either side. If there are several ships in the vicinity the recording lights from any of them can be shut off until the position of the others has been observed.

Exhaustive tests, extending over eight days, have been made on the Mersey in misty and windy weather. The sounds made by the fog horns of steamships and the whistles of railway engines were recorded with surprising accuracy.

#### FREIGHTS AND FIXTURES

We publish herewith the general monthly freight report compiled for the Pacific Marine Review by Messrs. Hind-Rolph & Co. of San Francisco:

The Pacific Marine Review,  
379 Arcade Annex,  
Seattle, Washington.

Dear Sirs:

The past month has not brought forth any material change in the freight market, rates continuing firm with, if anything, a slight upward tendency. The following are the most interesting fixtures:

#### Steamers

S. S. "Detmold," San Francisco, U. K. Cont.....	50s
S. S. "Aberlour," San Francisco, Portland or Puget U. K. Cont. ....	50s 6d
S. S. "Manchuria," Portland, U. K. Cont.....	50s
S. S. "Indra," San Francisco, Portland or Puget U. K. Cont. ....	50s 6d
S. S. "Auguste," San Francisco, Portland or Puget U. K. Cont. ....	50s
S. S. "Northumbria," time charter, delivery Puget, re-delivery China or Japan.....	9s
Option re-delivery Australia .....	8s 3d
S. S. "Ockley," time charter, delivery Puget, re-delivery Sydney-Pirie range .....	7s 6d
S. S. "Frankdale," time charter, delivery Puget, re-delivery Sydney-Pirie range .....	8s 3d
S. S. "Hans B.," time charter, delivery San Francisco, re-delivery Sydney-Pirie range.....	7s 6d
S. S. "Ikla," time charter, delivery and re-delivery San Francisco, one round Australian trip.....	6s 3d

#### Sailers

"Oweenee," Portland, U. K. Cont., November.....	45s
"Iverna," Portland, U. K. Cont., January.....	41 3d
February .....	40s
"Goldbek," Portland, U. K. Cont., December.....	42s 6d
January .....	41s 3d
February .....	40s
"Omega," Grays Harbor, Lebu (Chile).....	65s
"Benecla," Grays Harbor, Chile.....	65s
Option New Zealand .....	62s 6d
"Wm. Nottingham," Puget, Sydney.....	55s
"Sehome," Puget, Sydney.....	57s 6d
"John Palmer," Puget, South Africa.....	83s 9d
"Alta," British Columbia, Sydney.....	60s
"Kona," Columbia River, New Zealand.....	66s 3d

Yours very truly,

HIND, ROLPH & CO.

#### PAGE BROTHERS' REPORT ON THE FREIGHT MARKET

The following is a comprehensive report on the freight market at the present time:

San Francisco, Cal., October 4th, 1912.

Editor Pacific Marine Review, Seattle, Washington.

Dear Sir: In our last report of freight rates on this Coast we mentioned that the remarkable advance would last, at all events during 1912. We now believe that the

high rates will even "linger in the lap of Spring of 1913," extraordinary as they are, for the world's commerce continues to exact enormous tonnage everywhere. We will again compare rates ruling on the 4th of May, 1912, the date of our review, and those now being paid.

Wheat from Portland or Puget Sound to U. K. Continent for November-December, 1912, loading, 31s to 32s 6d, now 42s 6d to 43s 9d for sail and 50s to 50s 6d for steamers.

Barley from San Francisco to U. K. Continent, 30s for August-September, today 45s for sailers and 50s for steamers.

Lumber from usual loading ports to Valparaiso for orders, 57s 6d to 58s, today 65s to 67s 6d and firm at that. To Sydney, as against 47s 6d then, now 57s 6d, and even 60s was paid in one instance. To Brisbane, 50s, today 62s 6d. To New Zealand, 57s 6d to 60s, today 66s 3d, and in one case 70s paid to New Plymouth. To Africa, 77s 6d to 80s, today 85s. To United Kingdom, as against 77s 6d we are paying 82s 6d to 85s. To Buenos Ayres, 75s then, now 100s is asked. These quotations all refer to sailers. Steamers have been in great demand at all times, and yet it has been hard to draw them to this coast. Time charters have ruled since May last to the Orient from 6s 6d on deadweight to 8s, at which they are strong, one steamer, the "Northumbria," having been taken even at 9s 1d on deadweight, with option of Australia at 8s 3d. To Australia a great amount of business has been done by steamers and large shipments have been contracted for early in 1913. Rates have ruled from 7s to 8s, in one case 8s 3d for delivery British Columbia, re-delivery Newcastle Pirie Range. In many instances charterers have taken steamers at 5s 6d and as high as 6s for delivery and re-delivery at Newcastle, Australia, up to this coast or Hawaiian Isles and return with lumber to Australia.

The disengaged list of steamers and sailers to this coast continues to be woefully small in view of the grain, merchandise and lumber to be shipped, which makes the owners a happy and enthusiastic lot. Well, they deserve it. For many years it has been the other way and the harvest cannot last forever. Yours truly,

(Signed) PAGE BROTHERS.

#### CANADIAN GRAIN EXPORTS

With every indication of a record crop, the Dominion government is much exercised, and the Minister of the Interior in particular, as to a possible congestion of elevator, rail transportation, terminal and shipping facilities. The principal grain merchants in Montreal have applied to the Dominion government to extend the period of navigation in the upper lakes to December 31st, and have asked the government to man the light house stations until that date. The grain merchants have also signified their willingness to pay increased transportation rates, for such an extension, on the Great Lakes, and also to pay increased insurance rates. Every year as the grain production increases, these problems of grain storage transportation and export become more acute, and confirm, as we have long urged, that having rejected reciprocity the Dominion government, Premier Borden and his administration must act vigorously and immediately deal with the construction of the Georgian Bay canal and other canal problems. The consensus of opinion of the really experienced men in the grain trade is that, as we have always contended, the Hudson Bay railway route is utterly impracticable. On the other hand many believe that some relief will eventually be given via the Canadian Pacific Coast and Panama canal, but all agree that the principal and ever increasing congestion throughout the entire route can only be relieved by a proper and early solution of the great canal problems in order to provide prompt clearance at lake ports and terminals.

## EFFECT OF PANAMA CANAL ON TRADE OF VANCOUVER, B. C.

**W**E have received the following interesting discussion from Captain T. H. Worsnop, of the Canadian-Mexican line of Vancouver, B. C. The figures dealing with the cost of steamship operations are of particular value.

"In judging the effect of the opening of the Panama Canal on the trade of Canada, we must look at the question first from the point of view of the trade of western Canada, and that necessarily will be governed by the cost of transit through the canal. We read that the President of the United States is authorized to levy a toll or due, ranging from 75 cents to \$1.25 per gross register ton, whatever is found necessary to pay for maintenance and interest, but not to exceed \$1.25. Owing to the fact that in the present bill as now passed, no revenue can be derived from American coast wise steamers, the whole of the revenue must be borne by vessels of other nationalities and steamers under the American flag if engaged in foreign trade. As if we take the cost of administration and maintenance alone at about \$10,000,000 per year, in order to raise that amount from a due of \$1.25 per gross registered ton, it would require a traffic of about 16,000,000 registered tons per year, or nearly 44,000 tons per day, which is about equal to two-thirds of the tonnage passing through the Suez Canal last year. In addition to which there is the interest on say \$400,000,000, which we will reckon at 3 per cent., making another \$12,000,000 to be borne by the government of the United States. Therefore, we must presume that it will be necessary to charge the highest rate permissible, viz., \$1.25 per gross registered ton. As yet it does not state whether this will be based on the rules of the United States measurement or the British measurement. If the former, then it would work out at about 63 cents per ton on the dead weight carrying capacity of the steamer; if on the British register at about 55 cents per ton on dead weight capacity. And it is on that basis I will draw my comparisons.

### Cost of Steamship Operation.

"We will take as our example and a base for our arguments the average cargo steamer of about 7,200 tons burden, which is the class of steamer which predominates in the carrying trade of the world today. The distance from Vancouver to Liverpool via the canal is about 9,000 miles; to London 9,165 miles; via the Magellan it is 14,200 miles. A steamer of that class coming via the Magellan would occupy about 71 days steaming time, and through the canal about 45 days steaming time, and giving three days extra for stoppages for coaling purposes on the Magellan passage and two days for the canal, makes the trip 47 days against 74 days, giving a saving of time of 27 days. The cost of operation of a steamer for 27 days when offset against the canal dues only leaves a saving of about 50 cents per ton in favor of the canal route in the cost of operation to the shipowner. Therefore, the public can not look for a great reduction in the cost of freight from the point of view of saving to shipowner. The greatest saving is in the point of time, which, of course, is of great consequence to the merchants, and the comparative accuracy to be depended on in the time of delivery, enabling them to operate their business with less capital. Furthermore, the risks appertaining to the voyage around South America to Europe are considerably minimized, which will be a further saving to the insurance companies, and consequently should reduce the premiums on cargoes.

The length of passage through the canal from Europe to Vancouver would be approximately as follows:

"For the ordinary 8 or 9 knot cargo steamer, about 47

days; for the ordinary 10 knot steamer, about 39 days; for the ordinary 12 knot steamer, about 32 days; for the ordinary 14 knot steamer, about 28 days; for the ordinary 16 knot steamer, about 25 days.

"Taking into consideration the time by canal and the average time taken by goods coming across the Atlantic and then by rail across the continent, the margin of time between them is extremely small.

### Prospective Freight Rates.

"With regard to the freight rates that will prevail via canal, we must bear in mind that during the last four or five years ocean transportation has been carried at abnormally low rates, and in many cases below a paying basis, so that we can not expect those conditions to prevail in the future. Dealing with the export of wheat, we are told that the rates from Alberta points to Liverpool via the lakes is about 45 cents per 100 lbs., and in the winter time via all rail it is 55 cents per 100 lbs., and that from Calgary to Fort William is 25 cents per 100 lbs., but present rates prevailing from Alberta points to Vancouver average about 22 cents per 100 lbs. But when the Canadian Northern and the Grand Trunk Pacific complete their lines of railway with their low grades, the rate then should be about 12½ cents per 100 lbs., or at the most 15 cents per 100 lbs.

"I have been informed by a man of great railway experience that at 15 cents per 100 lbs. there is a good margin for the railway companies. Then allowing, say, a cent and a half per bushel for elevator and switching charges at the terminal shipping point, and supposing that the steamer should charge the rate of, say, 26s 7d per ton, which is equal to 29 cents per 100 lbs., from Vancouver to Liverpool and European points, even this will give a rate equal to 45 cents per 100 lbs., which is the summer rate from Alberta, but this rate is given as the maximum.

"If we take a little above the rate that has prevailed for the same distance during the last four or five years and base the water carriage at about 22s 11d per ton, then we bring the rate down to 40 cents per 100 lbs., or the equivalent in the first instance of 27 cents per bushel, which must be borne in mind is an all through the year rate and available in the winter time when the rail rate is at 55 cents shipping via the east as well as in the summer. A point which is often overlooked is that of the quotations we hear about which are given to Liverpool while the other ports in the United Kingdom and continent are never quoted for the reason that the rates run from 3 to 5½ cents a bushel higher than is paid to Liverpool, whereas via the canal the probabilities are that all terminal ports would take the same rates as Liverpool.

### Carrying Grain in Bulk.

"A good deal of controversy has been raised as regards the feasibility of shipping grain in bulk from British Columbia via the canal. In my opinion there should be no difficulty in the carrying of grain in bulk without deterioration, if proper precautions are employed, such as are used from the Gulf of Mexico and the River Plate. In addition to the carrying of grain, there are other varieties of cargoes which will be carried in the upper decks of the steamer, both from British Columbia and from ports south of British Columbia.

"Further, the opening of the canal will enable the Pacific Coast to ship direct to the West Indies, which trade is at the moment practically closed to her, owing to the numerous transshipments, cargoes from the western seaboard have to undergo in order to reach their destination, and British Columbia would then also become a customer



of the products of West India, especially the sugar crop, which is now being imported from Java and other foreign producing countries. So altogether the canal as far as the import and export trade of western Canada is concerned should be very beneficial.

"Now, with regard to the question of the traffic between eastern and western Canada and the effect of granting of free tolls to the American coastwise steamers. The crux of this coastwise legislation depends upon what is strictly defined as coastwise traffic. If a United States steamer loading in Boston or New York for the Pacific Coast ports of the United States is allowed to come to Vancouver and discharge and still be classed as a coastwise steamer and free of canal dues, they at once are placed at an advantage over British owned vessels, and more so, if the same steamers are permitted to load cargo in transit from eastern Canada to west, which is hauled by rail to the eastern seaboard at Boston or New York from a Canadian point and allowed either to be brought here direct by the same steamer or transhipped at say Seattle or other Sound ports for transshipment to British Columbia. Even if she is allowed to discharge at Victoria on her way to the Sound ports, will she then be strictly a steamer engaged solely in the United States coastwise traffic?

"This is a question where Canada or British shipping is affected, and affected very severely, because the British steamer which commences loading, say in Montreal or Halifax, and then goes on to Boston or New York or other eastern United States ports and bound to British Columbia will not only be handicapped against the United States steamer by having to pay canal dues, but will be entirely prohibited from carrying any cargo from one United States port to another United States port whether transhipped by rail or otherwise. The contention may be put forward that the cost of operation of United States shipping is greater than British shipping; that may be, with reference to steamers trading from Europe in foreign trade, but when you come to vessels operated from one Canadian coast to the other Canadian coast, the operating expenses, etc., are practically the same, except a slight difference in the rate of wages on the Atlantic seaboard. This is the only point, and the crux of any dispute, in my opinion, with regard to any objections that may be raised to the granting of free canal tolls to steamers engaged in the United States coast to coast trade, and a point that should be seriously considered by the government of Canada. If it is not settled before the canal is opened, then it will always be liable to cause friction where otherwise pleasant relations might be maintained.

"With reference to the clause prohibiting steamships owned by railway companies to operate the canal, our jurists will have to settle the legality of such a law, as it would be very difficult in many cases to define where the railway companies or some one connected with railway companies interests begin or end.

"It is stated that the canal will be finished in 1913, but, and there is a but, they may find many obstacles when it is nearing completion that they have not reckoned on, and there is a great tendency to greatly discount the future as it will be when the canal is opened, for people seem to forget that until we have a greater population we can not consume more commodities than at present. The future prosperity in British Columbia depends in a far greater ratio on the rates of transportation to and from coast points to inland centers, and what action the railway companies are going to take with regard to putting our ports on the same footing as those on the Atlantic side. The adjustments of these are necessary to stimulate western Canada trade to a far greater extent than the opening

of the canal will the first two or three years. Furthermore it is of vital importance that the erection of elevators and other facilities should be proceeded with at once to afford the cheap and rapid handling of grain at British Columbia ports. This should be done either by the Dominion government or our own local authorities, otherwise the canal will be of little benefit to relieve the congestion of the western grain shipments, or tend to better our position from the exporting point of view."

#### THE AUSTRALIAN SERVICE OF THE OCEANIC STEAMSHIP COMPANY

We have noted in several of our contemporaries and also in the daily press a report to the effect that the postmaster general had annulled the contract with the Oceanic Steamship Company for carrying mails, ten trips a year, between San Francisco and Tahiti, this being done at the request of the company, which found that it could not compete with the Union Steamship Company of New Zealand carrying mails between the same ports.

We are glad to be able to publish Mr. F. S. Samuel's denial herein: "This is absolutely without any foundation." Mr. Samuels is the vice-president and general manager of the Oceanic Steamship Company. The following quoted from the editorial columns of the Sydney Morning Herald is most gratifying:

"The arrival of the first vessel of the Oceanic Steamship Company is an advent well worthy of attention. There is an interest in it from the point of view of its reinstatement of an old service, and there is also an interest in it from the point of view of its linking us up with America by one more medium of communication. That latter is its chief interest. \* \* \*

"A new line of steamships is important as connoting increased trade possibilities. In that regard it is significant that the tendency of shipping enterprise toward Australia has been of late a strong American tendency. The arrival here of this new Oceanic vessel was preceded by only a few hours by that of a Union Steamship Company's vessel from the same port of departure. Arrangements are also under way with a view to establishing two other regular services, namely, the Crown Line and the Waterhouse Line. All this activity denotes a keen American interest in Australia as a trade objective; and with tariff arrangements tending more and more to elasticity, the prospect for a great Australian export trade with America is of the highest importance, and directly served by every new link of communication. The vast population of the United States offers us every hope of thus developing our export trade.

"Moreover the link with America brings us a little closer to the great world—as will be seen from the announcement that the "Sonoma" carries mail matter dated 30 days ago in London. That is useful, and it is but one of the many details of usefulness in services of ships which extend our possibilities beyond their accustomed Canadian radius, which already opens up to us much of the great market of the United States, and which will presently expand that promise incalculably by virtue of the Panama Canal."

W. S. Scammell & Co., Inc., of San Francisco, are having a new steamer constructed which, when completed, will ply between San Francisco and Grays Harbor. This vessel is being built of steel and will be 237 feet long, 41 feet 6 inches beam, 16 feet 9 inches depth of hold, with six hatches, three full sets of cargo gear and will have accommodations for sixty passengers. Contract speed will be 12 knots. The vessel, which is to be principally used for carrying lumber, will be equipped with all modern improvements and conveniences.

## SHIPPING AND ALLIED FINANCE

Chicago-Milwaukee &amp; St. Paul &amp; Puget Sound Ry.—Deficit and Reduction of Dividend.

THE subjoined article, abstracted from the New York Evening Post, is self explanatory and confirms an earlier financial note, herein, written by me from London.

I agree with the compiler of this article, from which I quote, that the "St. Paul" extension to the Pacific Coast will eventually be fully justified. However, the "St. Paul" has not been financed with the same simplicity, prudence and skill that has characterized the Great Northern and Northern Pacific Railways, and its executives could learn much in sound and skillful railway finance from Mr. James J. Hill, into whose hands, if he were a young man, I should expect the "St. Paul" to pass. H. B. J.

"During the twelve months covered in the annual report published by St. Paul this week, one dividend at the old rate of 7 per cent was paid on the common stock, and then because of smaller earnings the annual rate was reduced to 5 per cent. As the statement at hand shows that only 1½ per cent was earned on the \$116,348,000 last year, a serious question arises as to whether even the smaller dividend rate can be maintained. However, despite the \$5,141,000 deficit reported for 1912, while seasoned dividend-paying stocks, like Union Pacific, Atchison and Northern Pacific are selling at a price offering from 5 to 6 per cent on the investment, St. Paul offers only 4½ per cent.

St. Paul is selling on a higher basis than Union Pacific, Atchison and Northern Pacific, simply because the shareholders of the company believe that the reduction in the dividend rate is temporary. Because of St. Paul's long-established policy to let its shareholders know what is going on, no secret was made of why the Pacific Coast extension was built, or how it has been financed. Up to 1906 St. Paul was creating an enormous volume of local business and turning it over to connecting roads. Naturally the directors wanted to get the longest haul possible on that business, so they started in to build the Pacific Coast extension, knowing that the venture would call for from \$150,000,000 to \$200,000,000, or even more.

## When the New Line was Opened

On August 1, 1909, the main line of 1,400 miles was completed, and since then over 500 miles of branch lines have been built. About the time St. Paul hoped to reap the benefit from its venture, trade reaction set in, followed by what President Earling refers to in his annual report as "the worst crop failure that ever occurred in Western Minnesota, South Dakota and Southern North Dakota." The decrease in the grain tonnage last year amounted to 762,193 tons, while freight earnings were smaller by \$1,961,000. In the meantime St. Paul was paying the carrying charges on \$211,000,000 new capital, \$100,000,000 raised in 1906, \$28,000,000 in 1909, \$48,176,000 in 1910, and \$34,893,000 in 1912. Just what effect those charges had on the company's income account is shown in the following table, comparing the figures for 1912 with those for 1906:

	1912.	1906.
Gross .....	\$63,122,743	\$55,423,053
Op. exp. and tax .....	50,590,399	36,444,331
Net .....	\$12,532,344	\$18,978,722
Other income .....	7,591,948	258,359
Net income .....	\$20,124,292	\$19,237,081
Fixed charges .....	10,193,846	8,454,317
Surplus for dividends .....	\$ 9,930,446	\$10,782,764
Preferred dividend .....	8,115,232	3,472,868
Surplus for dividends .....	\$ 1,815,214	\$ 7,309,898
Common dividend .....	6,956,760	4,072,872
Deficit .....	\$ 5,141,546	*\$3,237,026

\*Surplus.

## What the Figures Mean

To the outsider, it would seem that the Pacific Coast extension was a mistake, because St. Paul was forced last year to reduce its dividend to 5 per cent, and even then reported a deficit of \$5,141,000, whereas in 1906 a surplus of

\$3,237,000 was earned over the 7 per cent dividend. That, however, is not the way the average St. Paul shareholder looks at the matter. He figures that while the Pacific Coast extension paid no dividends last year it did pay 2.3 per cent on its \$100,000,000 stock in 1911, and 2.7 per cent in 1910. For a new road that is a most unusual record. He knows that all of that stock is owned by the St. Paul, and that larger dividends than were paid in 1910 and 1911 will be earned by the Pacific Coast extension as soon as business picks up. But what the St. Paul shareholder lays the greatest stress upon is the way the company has managed to distribute the carrying charges on the \$211,000,000 new capital raised.

According to the foregoing table, gross earnings for 1912, which was an off year, increased \$7,699,000, compared with 1906, whereas fixed charges increased only \$2,739,000, and a large percentage of that increase is in bonds, which eventually will be converted into stock. In other words, the St. Paul shareholder knows that only 35 per cent of the \$211,000,000 raised to build and equip the Pacific Coast extension bears a fixed charge, and that the balance was secured either by the sale of stock or convertible bonds. Last year, with 2,197 miles of new track, operating expenses ran as high as 80 per cent of gross, compared with 65 per cent in 1906. Until business resumes normal proportions and until the many creases which always go with new mileage are ironed out, St. Paul's dividend disbursements will be uncertain, but it is one thing to be uncertain about dividend obligations and quite another to fail to earn fixed interest charges. A safe feeling goes with the knowledge that a temporary reduction in the dividend is the worst that can happen.

## The Outlook for 1913

Regarding the future, in his remarks to shareholders, President Earling said that "the 1912 crops of small grains in the territory tributary to the company's lines are excellent, and the yield will be considerably above the average. Since the close of the fiscal year, ended June 30, 1912, there has been a general revival of business in all lines, and the outlook is that there will be a substantial increase in the earnings of the current fiscal year." In the meantime the company has \$76,096,000 working assets, including \$22,183,000 cash and only \$8,313,000 current liabilities, \$48,785,000 due from the Pacific Coast extension for advances, and a profit and loss surplus of \$42,931,524.

On July 13, just before the last dividend was declared, St. Paul sold at 99½, which, with the exception of the panic year, was the lowest level touched in fourteen years. St. Paul crossed par for the first time in 1897, and afterwards sold up to 199½; it may be some years before that level is again reached in the stock market, but as a business proposition St. Paul will enjoy more real prosperity in the future than it ever has in the past. That prosperity will be a natural outgrowth of the Pacific Coast extension, which was well built and conservatively financed."

## IMPROVEMENTS SUGGESTED FOR PORTS OF VICTORIA AND VANCOUVER

Mr. Thos. Harling, a well known steamship and freight broker of Montreal, recently visited Vancouver, B. C., where he inspected the harbor terminal facilities. In his opinion the most important question is the establishment of large terminal facilities at British Columbia coast ports, which should be undertaken by the Canadian government on the same lines as at Montreal, Quebec, St. John and Halifax, N. S.

He states that since the establishment of a small commission at the port of Montreal matters have advanced rapidly, the necessary capital being provided by the government at a low rate of interest, which is protected by the harbor dues of the port.

Mr. Harling further states that a similar strong local board could do much to advance the interests of Vancouver and Victoria, besides being of very great assistance to the development of traffic which should find its outlet by Pacific ports.

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## OUR MERCHANT MARINE AND THE SEAMAN'S BILL

A WIDESPREAD public desire for prompt and effective congressional action in the upbuilding of our Merchant Marine has existed for the last fifty years, but it has never been brought more impressively before the nation at large nor has it ever worked more deeply disappointing in many ways upon all who have honestly striven for its rehabilitation than in connection with the near approach of the opening of the greatest inter-oceanic canal. This ocean highway, which will benefit every maritime nation of the world, save our own, an accomplishment of enterprising perseverance and ability of this nation's skill, will under existing conditions, not advance our Merchant Marine at large.

The one redeeming feature in the Canal Toll Bill is the exemption of our vessels employed in the coastwise trade. Protected as this trade is by the Monroe Doctrine, it must be conceded that these vessels have particularly and deservedly been favored. I state deservedly for we can never do too much for any Merchant Marine enterprise and a bright future is in store for this class of vessel. The activity of our Eastern shipbuilding yards speaks substantially of what can be expected.

However, the solving of the longed for problem of an American Merchant Marine on the Seven Seas is before us unchanged as of yore.

What will become of it in the offshore trade? Is it to remain, what it is, a mere pittance compared with the merchant marines of other nations? Will it effectively be aided by congress for a rehabilitation in the future or will it through further injudicious legislation be conned to total destruction?

It is the latter question that is confronting us today more than ever before.

What have we accomplished in the direction of just improvements in the past? What are we doing at present to relieve existing deplorable conditions in our ocean carrying trade? Nothing! Foreign nations are reaping the benefit of our stagnancy of actions and justly rejoice in the existing favorable ocean freight rates, caused by the revival of trade conditions and enhanced by a period of excellent crop conditions which has created an activity in shipping never before experienced.

With every opening of congress we have expected judicious steps to be taken and with every adjourning of congress these rays of hope have vanished without bringing the longed for actions of necessary and staunch supporting legislation.

The American flag is not seen on the flag-staff of any merchant vessel in the great shipping ports of Europe with perhaps the single exception of Southampton and lately Antwerp since the American flag was rehoisted on the S. S. Kroonland and Finland. It is, however, flying on the foremasts of the great liners of foreign nations, indicating their destination, the United States of America.

Mr. F. Hopkinson Smith, in an article entitled "Picturesque New York," as published in the September issue of "The World's Work," states in the introduction to his interesting article, sub-titled "Manhattan": "On the rivers themselves, threading the currents like shuttles in a tangled loom, cross and recross the ships of all nations—not ours—the other fellows! Huge leviathans, ferry boats from Hoboken to Plymouth, high waisted brigantines in from the Pacific; barks, steamships; oil tramps—everything that floats carrying every known flag but—our own."

The Panama Canal, when completed, will have cost this nation \$400,000,000; over \$600,000,000 is annually paid by the people of the United States to foreigners for the carrying, marine insurance, etc., of our foreign trade instead of being expended upon American enterprise and American labor.

We have become larger producers and have become larger consumers. The greatest commodities of the world are leaving our shores, not marketed by us, not carried by us, not underwritten by us and not financed by us.

We have fully experienced that it is just as important to be self contained in our foreign trade as it is in our trade at home, but we permit ourselves to be influenced by agitators and pass bills of retroactive measures impeding even today the few American ships employed in this foreign trade. We do not heed the prudent procedure of other nations which during the constant decline of our Merchant Marine, in the last fifty years, have step by step and with remarkable tenacity parcelled the oceans out to their own spheres of activity, resulting alike in most successful maritime accomplishments of these trading nations. What we have lost during this long period of debating pro and con will take us a hundred years to regain if we may still hope at some future time to control a small share of the world's oversea commerce in vessels under our own flag, but our system of procedure to obtain and retain this must first undergo a radical change.

The need of means to regulate commerce that our trade should bear toll charges radically out of proportion to actual cost is no less essential than the prevention of the passing of bills with which the American Merchant marine is so perniciously and threateningly confronted today. I refer in this connection to the amended Wilson Bill, H. B. No. 23673, which has passed the House, and will, in all likelihood, as I am authoritatively informed, pass the Senate in the near future. It is hoped, however, and it is just as probable that President Taft, the great jurist that he is, will veto it, not only on account of the bill's absolute injustice to our own interests but on account of its viciousness touching on international importance, which would, as I have stated in the Pacific Marine Review's July issue, necessitate the revision of our existing treaties with other nations to prevent international complications.

The bill has been repeatedly discussed in these columns and many able, competent and unprejudiced men have fully expressed their views, which are in disfavor of the bill, pronouncing the measure retroactive and decidedly harmful. No expression of opinion, however, hits the nail more squarely and effectively and proves of deeper study on this subject, based on long years of experience in the field of marine affairs, than the following correspondence now at my disposal:

"During a period of forty years I have seen many changes in the American Merchant Marine, also the retrogression

of the American seaman and am as familiar with their passing as most men and as far as this bill is concerned I cannot see that it will benefit the Merchant Marine in any way, shape or form. From a political standpoint, yes. There is a preponderance of what we call sea lawyers in the business and they have long since made the discovery that the sailor boarding house master made his fortune robbing the sailors' and for years past all kinds of laws have been passed for the destruction of this human leech. But unfortunately, it has passed into the hands of the political parasite, which is, if anything, worse than the boarding house man, and he is still the pimple that keeps the political parasite alive in seaport towns and cities, also upon the Great Lakes. Visit San Francisco, Seattle, Portland, San Pedro or San Diego during a national election campaign. Go to San Francisco and study the labor situation and you will find that the Coast Seaman's Society leads all labor organizations in those cities and their leader is practically the father of Bill No. 23673. This man is the leading power in the seamen's world and perhaps he is a Joshua sent to remodel the Merchant Marine. He is a gifted orator and knows the sailor from A to Z and in some points he is right, but he cannot make laws that will change the average sailor (I won't say American sailor, as there are none). He might as well try to run water up hill without pressure. There is one point to be considered and that is, without discipline on shipboard it is impossible to operate them. The navy is a noble example. How far would this leader get if he tried to change the laws governing jackies on naval vessels? As far as treatment and rights of men are concerned, there is no comparison. The Merchant Marine is far ahead so far as treatment is concerned. The U. S. Quartermaster's ships are a fitting illustration of how easy it is to get crews to perform their regular duties on long voyages.

A few years ago the United States transports running between San Francisco and Manila were manned by what is called American seamen and everything was done to keep them on the ships, but it was impossible. They did pretty much as they pleased and if it did not suit them to work at their various duties, they would not do it. Drunk and disorderly they were logged and put in the "brig," but it made no difference, the same thing happened the next voyage. Today Philipinos are employed by the U. S. Quartermaster's Department. True, these people are considered American citizens, but it shows that Uncle Sam cannot manage the so-called American sailor and he has an abundance of discipline. There never has been the slightest trouble on the ships since the Philipinos took their places. I presume these conditions are matters of record in the Quartermaster's Department.

Our consuls in Japan and China know what a crew of American sailors and firemen are as far as behavior is concerned in foreign ports. Deck officers and engineers know and these remarks are particularly directed to the engine crew as we have had sufficient experience in that direction.

I am sure the Pacific Mail Steamship Company could give some interesting comments on their experience with white crews on the Oriental routes. When sailors and firemen behaved like men and did their work, they were treated like men, but when one has to contend with a drunken crew on board ship, it takes all the sap there is left out of those who are responsible for the working of the ship and safety of all concerned. There will be no change in the behavior of these men until the end of the world, and then some of the old sea lawyers will be left to dispute the facts of the disaster.

Seamen in the coastwise trade are of an entirely different class of men, i. e., those on the Pacific Coast. On the Atlantic, the fireroom crews are nearly all foreigners:

Italians, Greeks, Turks, Slavonians and Scandinavians, all American born members of steamship crews have vanished. Seemingly, they do not care for the work. When they were in the majority (and no statistics will show when this was the case) they wanted to become engineers and deck officers but the rise and promotions were too slow, hence their absence now.

Laws are made to deal with the insubordination on the part of any seaman, but these laws don't seem to work, for they have not in the past.

Today, if the Pacific Mail Steamship Company and any other American steamship company carrying Oriental crews, were forced to place citizens of this country in the fireroom and on deck, it would be impossible to get the men, and so far as getting 75 per cent of the crew to understand English, I don't think it would be possible. Of course, if instead of receiving \$30 per month, men on the Atlantic liners could receive \$50 on the Pacific, possibly they would leave their present places and become naturalized citizens. But as we all know, our Merchant Marine is and will for the next generation be a farce. The only thing for shipowners to do is to change the flag to the country that allows them the most liberty in the operating of their ships. (This, I am informed, is the intention if this bill ever becomes law).—Ed. Note.

This act, No. 23673, is to abolish involuntary servitude in foreign ports and to prevent unskilled manning of American vessels, etc. So far as involuntary servitude is concerned, this is caused by the sailor himself. If he is at all anxious to remain by his ship and attend to his duties as he signed an agreement to do, there would be no trouble, but it is not possible to man a deep water ship with this kind of men, it never was so, nor will it ever be so. The navy is a different proposition, men enlist for three years and they want to travel around the world without cost and after three years the chances are that they will try again, for they will never be satisfied to remain ashore and do a hard day's work after three years of an easy time under Uncle Sam's care. If they get ashore and get drunk there is always someone to look them up and place them aboard the ship, but when a schedule has to be kept it is different. This is the sailor all over the world."

What a convincing summary of facts!

The passing of the sailing ship trained sailor the world over is another established fact and has caused since some years past considerable uneasiness in all countries interested in maritime affairs. The training of our youngsters on steamships does in no way compare with the old time hardy school, a mill of right good earnest, which all those who have gone through remember with particular pride. Training on steamships is naturally lacking in resourcefulness, ability and persistency of old school methods, which as a natural consequence acted as the true tonic, inspiring affection and intensifying professional enthusiasm. With the departure of the wind-jammer, the essential school ship of the sailing ship type was called into existence, which some of our eastern states and large foreign steamship companies deem and justly so, indispensable for the training of their future officers. If I judge rightly, the auxiliary sailing ships to some extent may on account of their economical operation replace in the near future the more costly operating tramp steamer and an opportunity will again present itself to start training anew on similar good old principles. But will the educated and bright American boy of today take to this school while so many more promising fields proffer themselves for earning an easier living ashore and without the inevitable exposure to nature's elements in this research of essential experience and ingenuity to do battle with wind and sea?

I am inclined to believe he will not, but it will again



attract and benefit the foreigner coming to our shores who under the American flag is better paid, better fed and in some instances better housed.

Thus, why the uncalled for agitation for the passing of this, in my opinion, most retroactive bill ever passed by the House and which seems to have been called into existence to protect the foreign born sailor serving under our flag, of whom 95 per cent consist of foreigners absolutely, while only 5 per cent are American naturalized citizens.

Hospitality has always been our strong point, since the date of that historic document, the Declaration of Independence, "all men are born free and equal," we have been keeping open house to all the world and to a large extent have welcomed and cared for millions of more or less unlettered and unkempt dumpings, with which came the yeast of unrest.

In the beginning it worked slowly, but has in the present time of unquietness fermented so rapidly that it now in many instances requires as a check the mailed hand of the law.

The more gifted foreigner, having acquired the fluency of the English language, saw a harvest ahead in this field of unrest, formed and is now leading a society working in co-operation with foreign institutions of this character. With remarkable skill and persistency, in the persuasion of the less skilled and assisted by other human leeches, he has feathered his own bed, has succeeded in the desired influence and preponderance to which many of our otherwise just and skillful legislators have so unfortunately yielded and hence the passing of the glorious Seaman's Bill in the House.

Are we to continue to be the one nation altruistic enough to think that charity begins abroad?

The Chinese crews on our Pacific liners debarred from landing on our shores are indeed giving the best of satisfaction; they have proven themselves to be truly trained sailors, belonging to a nation whose coast inhabitants are born on the water and live on the water. Male and female alike from their very childhood are expert oarsmen, with which fact anyone is amazingly impressed when visiting Shanghai, Hongkong, Hankow, Canton, in fact every Chinese port alike, large or small.

No finer and no more fit crews ever served the stokehold of any vessel, no better, more intelligent, unassuming and faithful waiters ever attended to the wants of passengers than Chinese. These law-abiding, diligent and obedient workers, always sober and never troublesome, principally constitute the Oriental element which the Seamen's Bill intends to replace, as originated from and agitated for by its pseudo apostles. And why? Because this class of men have not as yet acquired sufficient knowledge of the world's commercial language, English.

But let me assure the agitator that in case of emergency, they even understand the sign language of their superior officers (in the Orient called Europeans as a distinction from the Mongolian race), and when rightly lead are a marvel of tact and coolness, during catastrophes. To this I can convincingly and honestly testify.

Chinese in general are a hard working, persistent and highly intellectual race; they are born merchants of no mean ability and integrity and are in possession of remarkable talent for the acquirement of foreign languages. Reformation of promising and comprehensive statutes are changing from old and sterile methods in the awakening of this ancient and gigantic nation and few can possibly underestimate the effects it will have on the world's commerce in the next decades. That the Chinese government will offer every possible inducement to friendly nations for the investment of capital in vessels operating under the flag of this new republic, which investment will bear

interest, is beyond the question of a doubt and that this flag will sooner or later seriously compete with ours in the Trans-Pacific trade, which this pending bill now before the United States Senate so unjustly threatens, is but a natural result of consequences. What will the Seamen's Bill amount to then? Just as little as we in the every day life could or would hinder an industrious, upright and honorable man from success in his sphere, just as little can we prevent fair competing oriental maritime nations to take advantage of our lack of foresight for the expansion of our over-sea commerce under the flag we all love.

In relation to Lascar crews, which are largely employed both on British subsidized mail steamers, as well as cargo steamers in the East India trade, "Fairplay" writes the following:

"Particulars have just been published of the splendid behavior of the Lascar crew of the Anchor Line steamer "Anchoria" during a gale. It appears that on the 30th of June the vessel was in latitude 40 N., longitude 58 E., there being a strong southwest monsoon blowing, and a heavy sea running, when a sea was shipped which washed six Lascars overboard and injured three others on deck. The vessel was manouvered and the dinghy launched, the second officer being in charge, and no difficulty was experienced in selecting a crew as the whole of the deck hands and firemen, who were Lascars, volunteered to man the boat. After a good deal of trouble four of the six Lascars who were washed overboard were rescued, and the captain states that the boat's crew did their perilous work in a manner that would have reflected credit on any nationality, the rescue being effected in a heavy sea and with a boat which was not a lifeboat."

O fortunatos nimium sua si bona norient!

E. F.

This article was written about September 23d.

#### AMENDMENTS OF STEAMBOAT INSPECTION RULES AND REGULATIONS

It is with much satisfaction that Puget Sound ship-owners have received the following circular from the Steamboat Inspection Service and much relief is felt that a change has been made in the regulations for life-saving equipment.—Ed. Note.

U. S. Supervising and Local Inspectors, Steamboat Inspection Service:

Referring to so much of bureau circular dated June 29, 1912, as relates to the lifeboats required on steam vessels, you are advised that at a meeting of the executive committee of the Board of Supervising Inspectors of Steam Vessels held at Washington, D. C., on September 6, 7, 8 and 9, 1912, the following amendment to the rules governing boatage of lake, bay and sound steamers was adopted, which amendment was approved by the Secretary of Commerce and Labor on September 12, 1912, and has now the force of law and must be observed accordingly:

Lake, bay and sound steamers carrying passengers and navigating the waters of the lakes, bays and sounds tributary to the Pacific Coast, the Atlantic Coast south of the 33rd parallel and north latitude and the Gulf of Mexico, must be equipped with lifeboats of sufficient capacity to accommodate at one time at least 30 per cent of all persons on board, including passengers and crew: Provided, however, that steamers navigating routes lying at all points within a distance of five miles from land, or over waters whose depth is not sufficient to entirely submerge the vessel in case of disaster, will be required to be equipped with lifeboats of only such capacity as will be sufficient to accommodate at one time at least 10 per cent of all persons on board, including passengers and crew. Three-fourths of

the lifeboat capacity required on lake, bay and sound steamers may be in approved life rafts or approved collapsible lifeboats.

The above information in regard to the amended rules for lifeboats is thus given in bulletin form in order that you may have in your possession immediately the latest rules in regard to the subject, and you are directed to be

governed accordingly in the boating of vessels subject to inspection.

The lifeboat rules as set forth in bureau circular of June 29, 1912, will remain in full force with the exception of the above amendment.

GEO. UHLER,  
Supervising Inspector General.

## THE PANAMA CANAL

**A**LTHOUGH there is little to add to previous reports and discussions herein, the subjoined, under the heading of "The Shifting of Trade Routes," from the London Times is worthy of reproduction.

There is no denying the fact that the Panama Canal Act has aroused a hostile feeling throughout Europe and particularly in the Dominion of Canada, which will be intensified if, as seems possible, though we must admit scarcely justifiable, the United States should refuse to arbitrate at the Hague the points at issue.

It is argued that not only is the exemption from tolls of American steamers engaged in domestic trades a breach of Article III, Sub-Section 1 of the Hay-Pauncefote Treaty between the United States and Great Britain, but that such exemption will unduly and unfairly place the burden of the costs of maintenance and operation of the canal upon foreign shipping.

Personally, we consider that argument is well founded and have always contended that it is unnecessary to grant exemption to domestic lines, which are already sufficiently protected by reservation to domestic registers, which are prosperous and which could well afford to pay reasonable tolls, a contention which is sustained by the chief executives of such coastwise steamship lines, "Inter-alia," President Dearborn of the American-Hawaiian Steamship Line.

However, the present popular and exaggerated hostile feeling against transcontinental rail lines, which the public seems to attack directly and indirectly, regardless of the fact that these are the greatest national and international assets, has prevailed; hence the exclusion from the canal of railway controlled steamship lines and the exemption from tolls of independent steamship lines engaged in competition with such rail lines.

On the other hand Europe contends that it is not concerned with, though it may appreciate the difficulties of those domestic issues beyond a literal and proper construction of the text of the treaty.

The "impasse" reached is unfortunate, and while, as ever, resenting any undue interference by foreign nations in any strictly domestic issue of the United States, we feel that this is a case which in all honor should be submitted to arbitration at The Hague, and we suggest that it would be neither fair nor honorable for the United States nation, of which we are proud to form a humble part, to take advantage of the complicated situation in Europe which practically prevents Great Britain from insisting upon her claims.

H. B. JAYNE.

### THE SHIFTING OF TRADE ROUTES

The opening of the Panama Canal for traffic will result in a shifting of trade routes comparable only with the effect produced by the closing of the eastern channels of trade by the capture of Constantinople by the Turks in 1453. That event was the impelling cause of the discovery of America. It led swiftly to the decline of the Mediterranean states and to the beginnings of the rivalry for world dominion among the Atlantic powers.

The most obvious result of providing a waterway through Central America will be to reduce the distance between

New York on the eastern and all ports on the western seaboard of America, north of Panama, by the pretty considerable figure of 8,415 miles. The voyage between New York and the Pacific ports of America, south of Panama, is reduced by an average of 5,000 miles. Substituting Liverpool for New York, the reductions in these two cases are 6,046 miles and 2,600. So the United States stand to gain very substantially in these respects.

#### Asia and Australia

How will the new canal affect the position of Liverpool and New York with regard to the Asiatic and Australian trade? Before the Suez Canal was opened (1869) the route to Asia and Australia both from Liverpool and New York was via the Cape of Good Hope. This gave Liverpool an advantage of 480 miles for Asiatic, Australian and East African ports. But when the Suez Canal was made this advantage lengthened out at once to 1,924 miles, a net competitive gain of 1,444 miles, in respect of Asiatic ports. In the case of Australia, Liverpool obtained a net advantage of 1,142 miles, the voyage to Australia from New York being still made via the Cape of Good Hope. Now, what will be the effect of the Panama Canal on this situation? So far as the Atlantic coast of South America, Africa and Asiatic ports south of Shanghai are concerned, the relative distances of Liverpool and New York are unaltered. But New York is brought at once very much nearer than Liverpool to Yokohama, Sydney, Melbourne and New Zealand. A brief table given by Dr. Vaughan Cornish in his book, "The Panama Canal and its Makers," is well worth considering by British Imperialists.

Yokohama—	Miles.
Liverpool, via Suez, Aden, Colombo, Singapore,	
Hongkong and Shanghai .....	12,234
New York via Panama, San Francisco and Great	
Circle .....	9,835

Nearer to New York than to Liverpool by.....	1,805
Sydney—	
Liverpool, via Suez, Aden, Colombo, King George's	
Sound, Adelaide and Melbourne.....	12,234
New York, via Panama and Tahiti.....	9,852

Nearer to New York than to Liverpool by.....	2,382
Wellington, N. Z.—	
Liverpool via Panama and Tahiti.....	11,631
New York via Panama and Tahiti.....	8,872

Nearer to New York than to Liverpool by..... 2,759  
From a British Imperial point of view this tremendous shrinkage of space between the Australasian dominions and the great American republic is significant and important. Eastern Canada is, of course, brought proportionately nearer the southern dominions of the British empire, but the cold fact remains that Australia and New Zealand, which are now more than 1,000 miles nearer Liverpool than the eastern seaboard of the United States, will in a very short time be brought nearer to New York than to Liverpool by about 2,500 miles.

#### Economic Effects

It is difficult even to imagine the commercial changes and developments which may be expected from the opening of the Panama Canal. The canal itself, it should be remembered, is only a part of a vaster waterway scheme contemplated by the United States. The Mississippi val-

ley is, perhaps, the richest economic area in the world, and this new scheme, which enjoys the vigorous support of Mr. Roosevelt, will give a great stimulus to its development. Dr. F. B. Vrooman, in his valuable monograph on ex-President Roosevelt, writes:

"The perfecting of the Panama Canal and the Lake Michigan Canal, the canalization of the Illinois river, the perfecting of the channel of the Mississippi itself and the deepening and otherwise perfecting of the channels of its larger tributaries will furnish the backbone of the great conservation scheme. So that, as far as transportation is concerned, steamers from Honolulu and Yokohama can load their freight at Duluth and Fort William, Toronto or Buffalo, and freight may be carried direct from the wharves of Minneapolis or Chicago, Pittsburgh or Omaha, to Bombay, Liverpool or Hongkong."

To the rich cotton fields in the south of this area will come more swiftly and cheaply through the canal the fertilizing nitrates of Chile and Galveston will go forward even more rapidly than in the past. One of the immediate and striking effects of the canal will be to give a tremendous advantage to the iron and steel exports of the United States to the western American coast and the Orient, as against those of England and Germany. A great expansion of the silk industry in the United States is also certain to result from the shrinkage of space between the republic and Japan, the main source of the raw material.

#### The Sailing Ship

Of course it is not impossible to exaggerate the effects of this great event. We need not anticipate, for example, that the sailing ship, the "windjammer" or "limejuicer," in the maritime vernacular, which is now so important a factor in the nitrate trade of the south and the corn and lumber trade of the North Pacific, will disappear entirely from the seas. No doubt new steam transport lines will be established between San Francisco and Europe, but the old lines, even of sailing ships, will probably subsist and still battle their way in the teeth of the "westerlies" round Cape Stiff, also the vernacular for Cape Horn. But the changes just briefly indicated will be important enough. We shall hear a great deal in future of the 'New Pacific.' With the opening of the canal that ocean will enter upon a new epoch of its political and economic history.

#### The Effect on British Lines

Nothing, writes a shipping correspondent, seems yet to have been determined on the score of actual developments by British shipping companies. All is uncertain. The British company which, above all others, must be affected will be the Royal Mail Steam Packet Company, with its allied companies engaged in the South American trade—the Pacific Steam Navigation and Lamport and Holt—and the Royal Mail has not yet shown its hand. Undoubtedly some of the vessels of these associated fleets will use the canal. The vessels of the Pacific Steam Navigation Company, for example, now proceed from Liverpool to Brazil and Uruguay and then by the Straits of Magellan to Chile and Peru. It would surprise no one acquainted with this trade to see the vessels completely encircling the South American continent—proceeding outwards by Magellan and homewards by Panama. Again, it would by no means be surprising to find the vessels of the Royal Mail Steam Packet Company tapping the Pacific ports of North America. This would indeed be a remarkable extension of their trade.

How the question of cost works out may roughly be seen in the case of the direct steamers between London and New Zealand, such as the large passenger and cargo vessels of the New Zealand Shipping Company. These vessels now make the voyage outwards to Wellington by the Cape of Good Hope and return by way of Cape Horn and the River Plate. Roughly, the voyage to New Zealand by

way of Panama would be 1,900 miles shorter than that by the Cape of Good Hope and the homeward voyage by Panama would be 900 miles shorter than that by the Horn. The total saving would therefore be 2,800 miles, which at the average speed of 13 knots now maintained represents a saving of nine days' steaming. Assuming, for the sake of argument, a toll of \$1 per ton, the total cost of the dues through the canal on a 12,000 ton liner for the round voyage would amount to nearly £5,000. That is a fairly formidable outlay to set against a saving of nine days at sea. Then there is at present no suitable coaling port in the Pacific between Panama and New Zealand, so that the vessels would have to carry very much more coal, to the sacrifice of cargo, than at present.

#### HARBOR IMPROVEMENTS AT LOS ANGELES

The Board of Public Works of the city of Los Angeles will receive at its offices at or before the hour of 2 o'clock p. m., on October 18th, 1912, sealed bids or proposals for the construction of about 2,520 lineal feet of reinforced concrete wharf complete, including 580 feet of railroad track, sheet pile bulkhead, anchorage, riprap protection, steel cylinders, pavement, fenders, foundation piles for warehouses, etc., along the westerly side of Huntington Fill in the outer harbor of Los Angeles.

What has heretofore been known as the Huntington Fill is now officially known as Los Angeles Municipal Dock No. 1. The entire area comprises about 77 acres, and a contract is now under way for filling it with approximately 1,200,000 cubic yards of earth, which will fill all except two piers at the southerly end. A channel 35 feet deep is being dredged along the easterly side of this area, and the city has the option of requiring a similar channel, under the same contract, along the easterly side. A reinforced concrete wharf is to be constructed along the westerly side for a distance of 2,540 feet, in accordance with plans prepared by Mr. E. P. Goodrich, of New York, consulting engineer.

The immediate improvements contemplated on this area, in addition to the building of the wharf, include railway tracks, asphalt roadways and warehouses.

The Board of Public Works has just advertised for the construction of 1,600 feet of creosoted pile wharf to be built along the upper end of what is known as the Mormon Island Channel in the Inner Harbor. Of this wharf, 600 feet will be served by freight sheds 100 feet wide. Bids for this contract will be opened October 7, 1912. The channel in front of the wharf has been dredged to the depth of 30 feet, and this depth will be carried to the same depth as dredged by the government in the Turning Basin.

Balfour-Guthrie & Co. advise that the Harrison Line steamers "Crown of Galicia," "Magician," "Crown of Cordova" and "Politician" will all call at the port of Salina Cruz, Mexico, but it is not known as to whether this port of call will be continued by the vessels to follow.

The Union Iron Works has now under construction five submarines and three steel vessels, two 245 feet long and one 230 feet long. They have considerable repair work on hand, also mining and dredge work. The submarine F-1 established a new world's record for vessels of that type by sinking to a depth of 286 feet on her recent trial trip.

#### NEW YORK GOVERNORSHIP, DEMOCRATIC NOMINATION, OCT. 3; NOMINEE, HON. WM. SULZER.

We congratulate Mr. Sulzer upon securing this nomination, but at the same time we feel that the House of Representatives loses one of its ablest and most active members and the Committee on Foreign Affairs a most efficient and distinguished chairman.

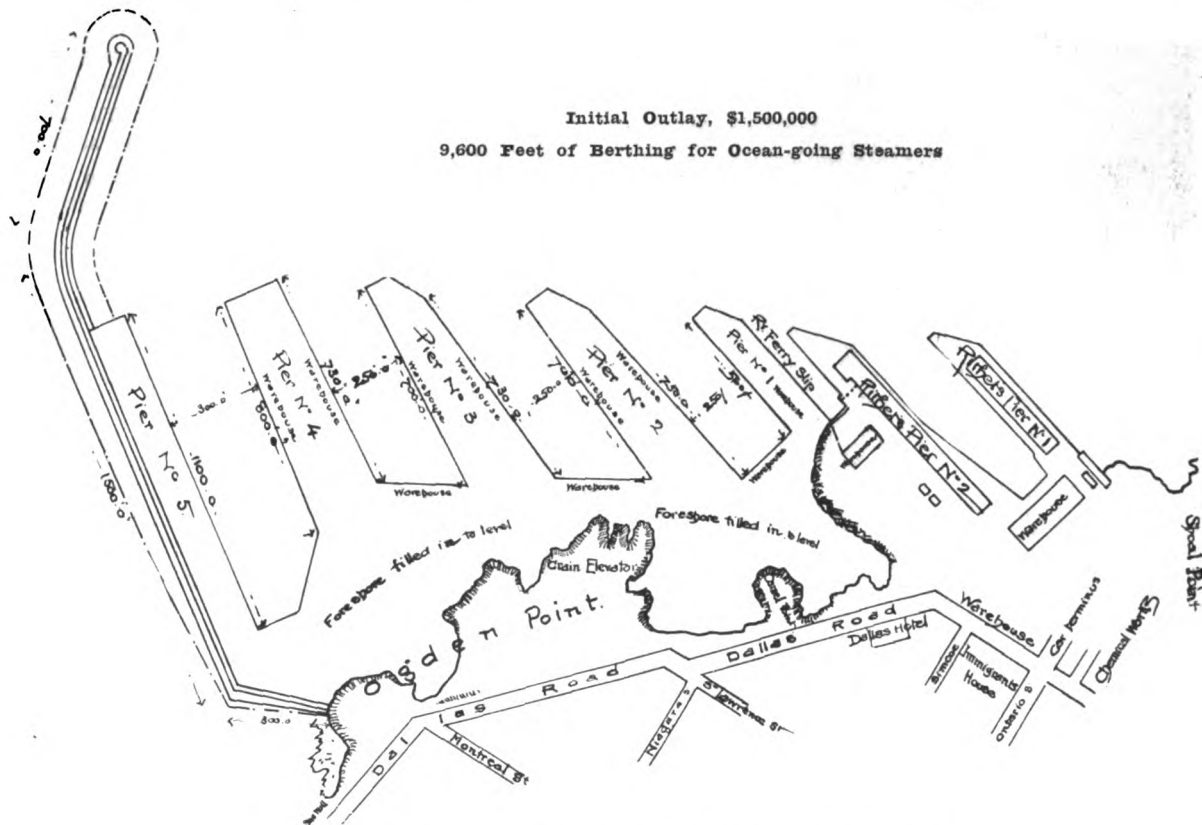
## THE HARBOR OF VICTORIA, BRITISH COLUMBIA

Improvements Planned by Dominion Government.

**P**LANS and specifications for the construction of the breakwater from Ogden Point, Victoria, B. C., have been prepared by the Department of Public Works. Tenders will be received from contractors up to October 15th. The work is to be completed in three years. The specifications provide that the construction is to be commenced immediately that the successful tenderers have been notified, and must be proceeded with in such a manner as will satisfy the Department of Public Works that the whole work can be completed within thirty-six months from the date of notification of acceptance of the tender.

Railway ferry systems already connect Victoria and the island with the mainland, but the final link with the mainland will be the bridging of the Seymour Narrows. This project, first broached in the 70's, cannot now be long deferred, since an outlet for middle Canadian wheat for shipment through the Panama Canal will soon be a vital necessity.

Victoria can handle considerable grain from the prairie provinces, as a cheap and safe route will be by cars loaded in Alberta, Manitoba, Peace River and Saskatchewan, shipped direct to Victoria via rail across the Seymour Narrows



**PLAN OF NEW OUTER HARBOR AT VICTORIA, B. C., CANADA**  
Now Being Built by Dominion Government

The Vancouver Island Development League, with headquarters at Victoria, B. C., has favored the Pacific Marine Review with the following information concerning the port of Victoria and the improvements planned thereat by the Dominion government.

"The City of Victoria, Vancouver Island, B. C., will shortly be the final furthest west terminal of five great transcontinental railway systems—the Canadian Pacific Railway, the Canadian Northern Railway, the Grand Trunk Pacific Railway, the Great Northern Railway and the Great Eastern Railway.

The Canadian Pacific Steamship Company and the Grand Trunk Pacific Steamship Company each operate a large fleet of steamships from Victoria; and in addition to these two companies, the Alaska Steamship Company, the Boscowitz Steamship Co., the Union Steamship Co. and others swell the long list of maritime companies operating locally from this port. Its foreign traffic has doubled in the past three years, both as to freight and passengers, and one hundred thousand tons of cargo were landed during 1911.

and loaded on the vessels docked at Victoria's outer and inner harbors.

Capital searches for economic and safe transportation as naturally as water seeks its level. Dangers of long and tortuous channels to open sea water, narrow passageways to ports and docks, and above all, fogs, mean the risking of millions, and high insurance. Victoria has none of these drawbacks.

Victoria is now an excellent distributive point and with the advent of through railway connection with the mainland by the Canadian Northern and Grand Trunk Pacific car ferries, and the bridging of the Seymour Narrows, her area of delivery will be tremendously widened.

Trade with the Orient is a separate and important branch of the city's trade, and this not only exacts a good share of business attention now, but bids fair to become one of the greatest departments of trade in the future. The possibilities of pulp and paper mills, with direct connection with China and Japan, is one avenue of trade not yet opened; the curing of fish from the cod and halibut banks on



the West Coast is another; the herring fisheries at Nanaimo and Ucluelet, sending annually something over a half million dollars' worth of salted fish to Japan, is merely a suggestion of the fisheries' trade values.

During the customs year just closed, of 1911-12, 9,778 ships arrived and departed, with a total tonnage of 7,307,274 tons. The rapidity with which the shipping trade of the port of Victoria is growing is shown by comparison with the two years previous. In 1910-11 the total of ships was 8,475, with tonnage of 3,673,697, and in 1909-10 the total was 7,254, with a tonnage of 4,826,769—an increase within two years of nearly two and a half million tons. The amount of cargo handled is over twice the total of the year ending 1910, an increase of over 100 per cent.

The increases in prospect for the various steamship lines,

harbor is further evidenced by the table of facts herewith submitted:

There are at present 30 vessels in the trans-Pacific trade to the Orient which call at Victoria.

Four of these vessels are owned by the Canadian Pacific Railway and call at Victoria every three weeks;

Nine belonging to the Blue Funnel line (Holt) call at Victoria every month;

Five belonging to the Bank line (Andrew Weir) call every month;

Six belonging to the Nippon Yusen Kaisha (Japan Mail) call every fortnight;

Six, the property of the Osaka Shosen Kaisha (Japan) call every fortnight;

All these lines are increasing their tonnage.

The Canadian Pacific Railway has under construction two new Empresses of a tonnage of 14,500 tons.

The Nippon Yusen Kaisha, which operates steamers of from 6,000 tons to 7,000 tons, are building six new liners of 8,200 tons.

The Blue Funnel line will have in a month or two a new steamer on the Victoria line, with a tonnage of 2,000 tons in excess of its other steamers.

There are three steamers making regular trips to Australia and New Zealand calling at Victoria on a monthly schedule.

Three steamers to Mexico call at Victoria also on a monthly schedule.

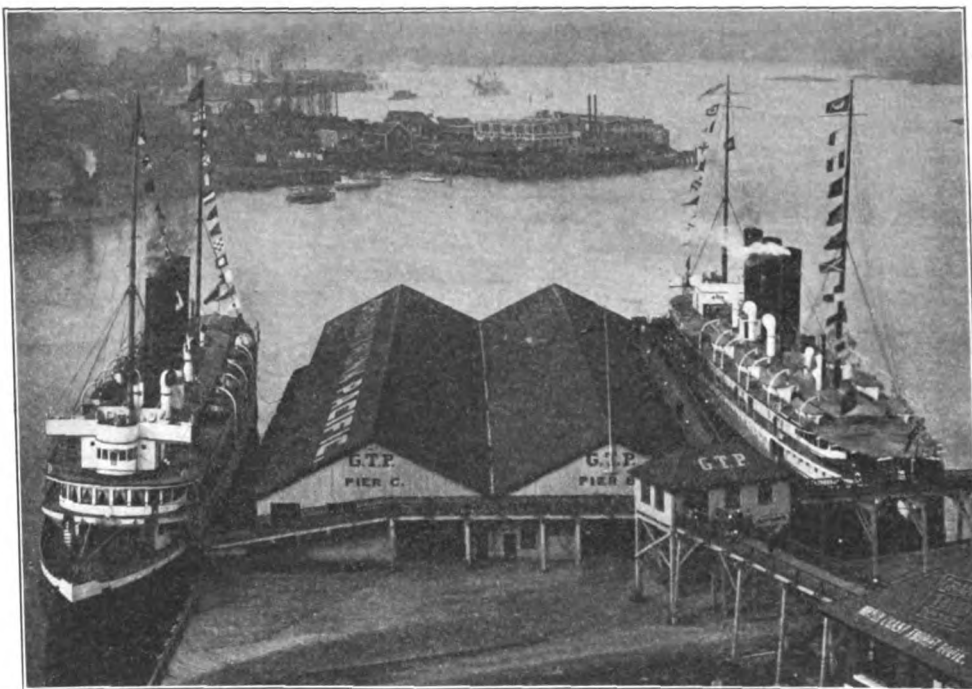
The Maple Leaf line from New York call at Victoria every month.

The Harrison line, from Antwerp, Liverpool and Glasgow, also call at Victoria on a monthly schedule.

The Outer Harbor as being built by the Dominion government will provide for something over 9,600 feet of berthing for the largest ocean going vessels, and will be of the very finest and most modern equipment in the way of docks, warehouses and machinery. The site was chosen after a thorough investigation by Mr. Louis Coste, the government's engineer, together with other noted experts. It will be, when completed, a model ocean harbor, and will have a straight and clear outlet to the Pacific Ocean.

The sum of one million and a half dollars for the initial outlay as a preliminary expenditure will indicate the magnitude of the undertaking. It will eventually cost much more than this to provide for the shipping necessities of Victoria, but this sum will give the city a large and commodious harbor, perfectly protected, and furnish accommodation for the constantly increasing ocean traffic which is coming to her outer port.

This harbor will in every respect measure up to the best harbors on the Pacific Coast, and will probably suffice for the needs of Victoria until its population begins to approach the 200,000 mark. Four immense concrete piers with spacious warehouses and modern cargo-handling facilities will be built out into the Straits of Juan de Fuca, and a railway slip will be built to enable car ferries to load and unload their trains at the docks.



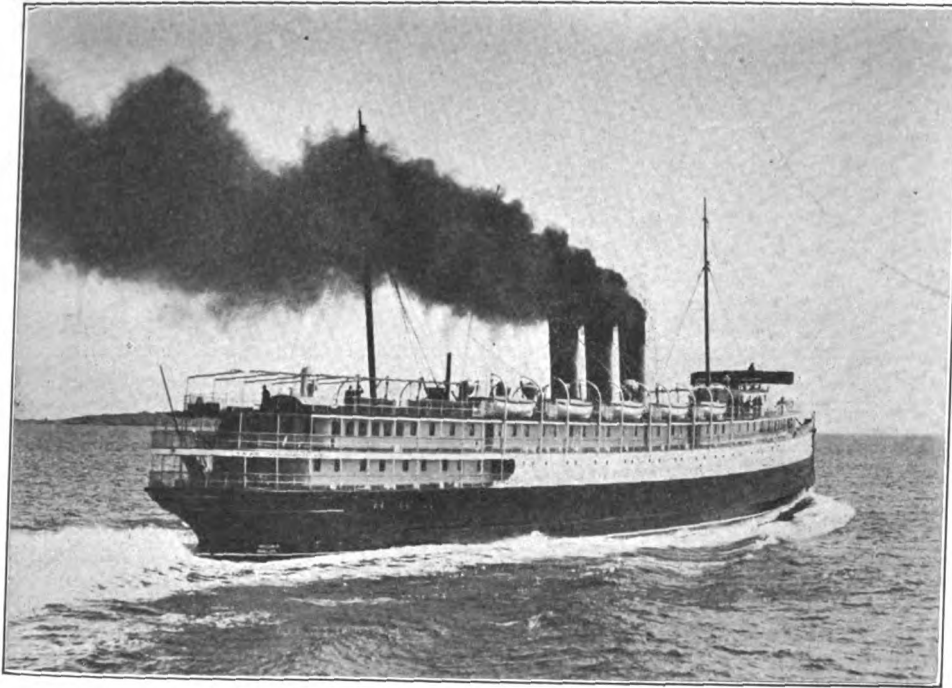
G. T. P. STEAMSHIP DOCKS, INNER HARBOR, VICTORIA, B. C.

and the new lines contemplated in view of the early opening of the Panama Canal, will result in much greater increases in the shipping trade of Victoria within the next two years. Vessels of larger tonnage are being placed in existing lines and many new vessels will make Victoria a port of call.

The opening of the Panama Canal will undoubtedly bring an immense amount of business to this port, as this will mean prairie wheat to her new outer harbor docks, and the cars bringing this grain will be re-loaded with lumber for the prairie provinces, thus saving the waste haulage which would inevitably occur where no standard staple was available to load the empty cars. Car ferries will be the first step in the transportation of this grain to Victoria, but the final solution of the problem of Middle Canadian wheat to British bottoms for Panama Canal shipment will be via the Seymour Narrows from the grain fields to Victoria elevators—one haul and one re-shipment.

It has been found necessary to enlarge shipping facilities in the outer harbor as the number of ocean steamers which berthed at the outer wharves this year will be nearly 2,500, representing a tonnage of over three million tons. The cargo landed was 38,000 tons in 1907; 48,000 tons in 1908; 60,000 tons in 1909; in 1910, nearly 80,000 tons, and it is expected that the returns of 1911 will show 100,000 tons, if not more.

The remarkable growth of traffic from Victoria's outer



CANADIAN PACIFIC STEAMSHIP "PRINCESS CHARLOTTE"

A breakwater of stone, with concrete blocks surmounted by a concrete wall 2,500 feet in length will extend westerly from Ogden Point, with a concrete pier 1,100 feet long on the inner side. The additional concrete piers will be of 500, 700, 730 and 800 feet respectively, and there will be room for close to 30 of the largest ocean going craft on the final turning over of the work.

Seven large warehouses will be erected, and a grain elevator is to be provided, and to connect the harbor works with the railway terminals on the 112 acres set aside for that purpose on the former Songhees Reserve, there will be direct rail connection, either with, or without bridges, according to the determination of the various interests concerned.

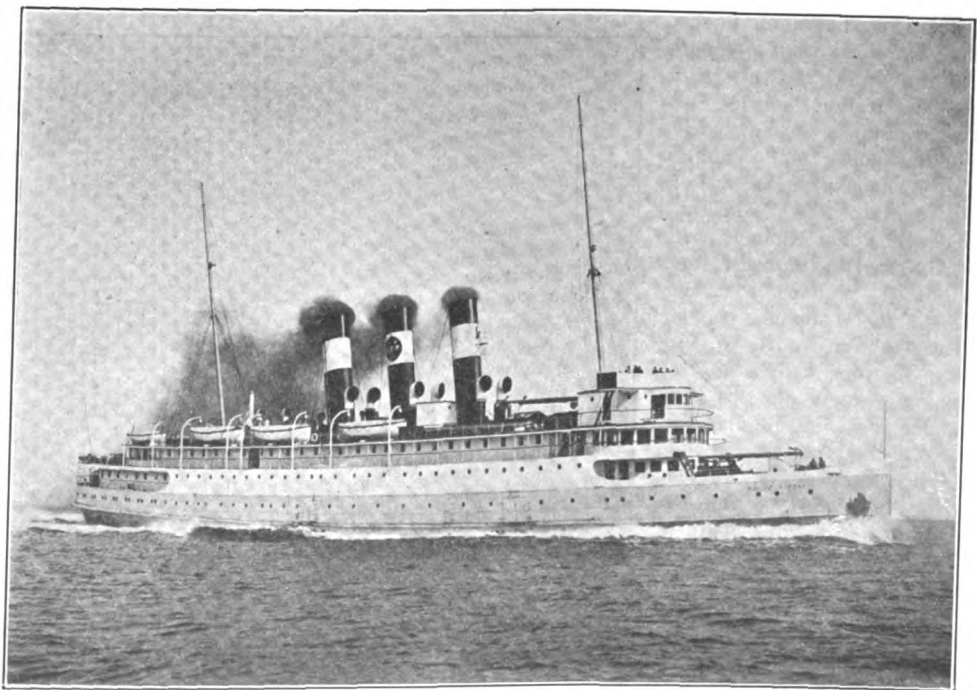
The Outer Harbor comprises an area of nearly 300 acres of water, varying in depth from 30 to 80 feet. The breakwater which is now being constructed under the Dominion Government's plan will not only effectually shelter all the piers to be constructed under the present arrangement, but all piers hereafter to be built to the north, and, in addition, protect the entrance to the Inner Harbor, thereby proving of incalculable benefit to the great number of coasting vessels entering and departing from the Inner Harbor.

The Inner Harbor is a very valuable asset to the city of Victoria as its coasting trade is very large, and is increasing annually at a rapid rate, but it is not possible to accommodate large ocean liners within its limits, and this has rendered necessary the building of the additional extensive outer harbor.

The following list of steamship companies and vessels using the Inner Harbor will give some idea of the volume of freight and passenger traffic there:

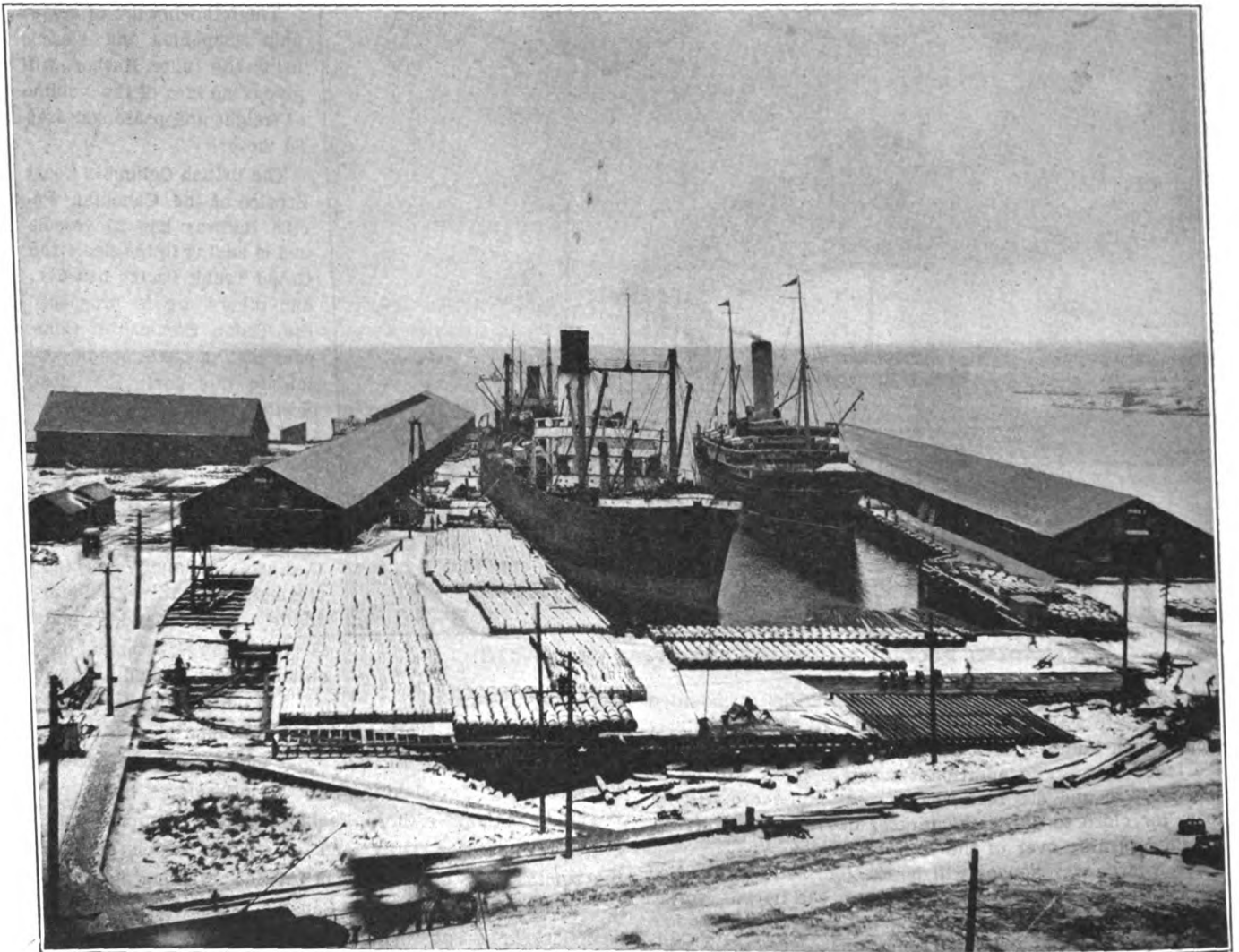
The British Columbia Coast Service of the Canadian Pacific Railway has 25 vessels and is adding to the fleet; the Grand Trunk Pacific has five, and others are in prospect; the Union Steamship Company of Vancouver sends vessels to this port; the Boscowitz Company operates two; the Northern S. S. Company two; the Vancouver-Portland Cement Co. operates the "Marion," and has a new vessel on the way; The B. C. Marine Company has the steamers "Salvor," "William Joliffe" and "Maude," and the Dominion Government operates a fleet, including the "Quadra," "Newington," "Beryl," "Point Ellice," "Point Hope," "Petrel," "Princess," "Ajax," "Mudlark," and other tugs and dredgers, and will soon add the new steamer "Estevan" and two fishery protection cruisers.

The Canadian Northern Pacific Fisheries Company operates the steamer "Gray" and ten whalers which, during the summer, are operated from the four whaling stations of the company. The British Canadian Fisheries, Ltd., has the "Edrie" and two smaller vessels and has ordered some trawlers, now en route from England, and a large fleet of freighters and tugs are operated by various owners, including the "Leebro," of the Crescent Steamship Company; "Selkirk," of Capt. Grant & Co.; "Forager," "Grain-



GRAND TRUNK PACIFIC STEAMSHIP "PRINCE RUPERT"





**BLUE FUNNEL LINER "TEUCER," CANADIAN-AUSTRALIAN LINER "ZEALANDIA," AND HARRISON LINER "CROWN OF GALICIA," LOADING AT OUTER HARBOR, VICTORIA, B. C., CANADA, FOR GLASGOW**

er" and "J. L. Card," of Brackman & Ker; "Oscar," "Celtic," "Ophir" and other vessels.

The Puget Sound Packet line employs the steamers "Fulton" and "Edith" in a regular freight service between Puget Sound ports, Port Angeles and Victoria and Vancouver; Dodwell & Co. operate the "Alaskan" between Puget Sound ports and New Westminster and Victoria; Wallace Fisheries have the steam trawler "Orontes" en route to Victoria to work with a fleet of fishing vessels off the Vancouver coast. A regular service is maintained between Victoria and Port Angeles with the "Energy," and the steamer "Burin" operates regularly between Victoria and the Fraser River. The "Iroquois," of the Puget Sound Navigation Company, runs for the C. P. R. between Victoria, Seattle and Tacoma in a daily service. The regu-

lar passenger and freight services from Victoria are increasing. The C. P. R. Steamship Company maintains four



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## Crosby Tow-Boat Company

W. R. CHESLEY, Manager

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Trade Mark

Woolsey's Copper BEST Paint is sold in every country for use on the bottoms of wood vessels and boats of all kinds.

In Japan and other countries our labels have been imitated and put on home production of paints, which is the best testimonial we can give as to its merits and efficiency.

About every paint manufacturer in this country at some time has made and put on the market a Copper paint, but so far practically all, or nearly all of them, without any satisfactory results, and WOOLSEY'S COPPER "BEST" Paint continues to take the lead. It does just what the manufacturers claim for it and the price is kept at a minimum in comparison with cost.

Woolsey's Copper Paints are sold at a lower price on the Pacific coast than in any other place in the world, for the reason that we have no traveling men to pay in that territory and the amount saved in this way is deducted from our selling price and the consumers get the benefit.

With these facts in view, there should be no inducement for vessel owners to experiment with unknown compounds and taking a chance of having their vessel's bottoms eaten and destroyed by the Tereido worm and coated with barnacles, sea grass, etc.

C. A. WOOLSEY PAINT &amp; COLOR COMPANY, JERSEY CITY, N. J.

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Marine Insurance Department

Norman Waterhouse in Charge

Telephone Main 2676

625 to 645 Central Building, Seattle, Wash.

steamers in service which give a schedule of three trips a day each way between Victoria and Vancouver, and with the "Iroquois," operated by the same company under the U. S. flag, two trips each way between Victoria and Seattle direct, as well as other services to Seattle via Vancouver. The "Princess Victoria" and "Princess Charlotte" ply on a route known as "the triangular run" from Victoria to Vancouver and Seattle to Victoria and vice versa daily, and the "Princess Adelaide" and "Princess Alice" operate daily between Victoria and Vancouver on alternate schedules. A traveller can leave Victoria or Vancouver at 10:30 a. m., 2:15 p. m. and 11:45 p. m. for either city direct.

The G. T. P. Steamship Company operates the steamers "Prince George" and "Prince Rupert" in a twice a week service to Prince Rupert and Stewart, leaving Victoria on Mondays and Thursdays for the north by way of Vancouver. It also operates these same steamers in a twice a week service to Seattle, leaving Victoria Sundays and Wednesdays. The same company operates the steamers "Prince Albert," freight and passengers, and the steamer "Henriette," freight only, for northbound ports between Victoria and Prince Rupert, the "Prince Albert" leaving Victoria on a tri-monthly service and the "Henriette" on dates supplied at the G. T. P. offices in Victoria. The "Prince George" and "Prince Rupert" sail at 10 a. m. of each day announced. The G. T. P. steamship "Prince John" connects at Prince Rupert for Queen Charlotte Islands and other points.

The Boscowitz and Union companies, now under joint management, operate the steamers "Venture," "Chelohsin" and "Vadso" in frequent service to Northern British Columbia ports. The Northern S. S. Company operates the "Cettriana" and "British Empire" in the Northern British Columbia trade.

The necessity of improving the Inner Harbor of Victoria was long ago made manifest. To quote from the report of Mr. Louis Coste, the engineer employed by the Dominion Government, and whose plan for both Victoria's Outer and Inner Harbors is now being carried out:

"This necessity really exists, and the adoption of a well studied project of improvements, and its systematic execution are of the greatest importance not only to the city itself, but to the whole of the Island of Vancouver, and to the Province of British Columbia, and to the Dominion.

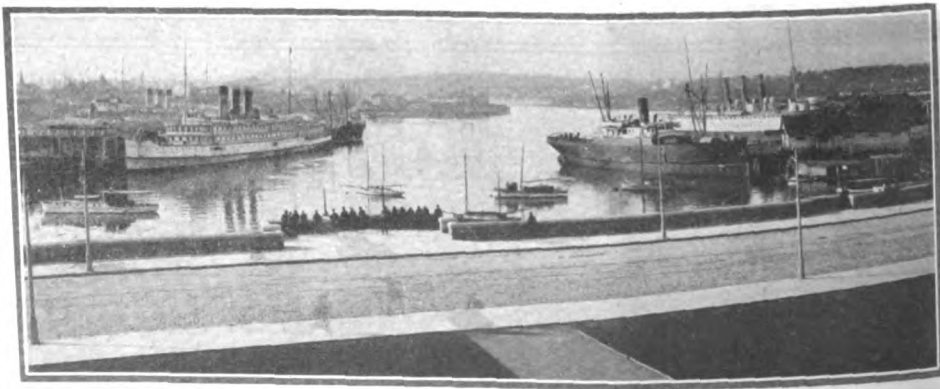
"The geographical position of that port, at the southeast end of the Island of Vancouver, almost at the point of junction between the Strait of Georgia and the Strait of Juan de Fuca, gives it a commanding advantage over any other port in the province in matters of trade and commerce with the ports of the United States on the Pacific Coast, and the fact that it is the nearest Canadian port to the Panama Canal is bound to very materially increase its tonnage when this great canal is completed.

"The city of Victoria, with a population of 50,000 inhabitants, is a terminal railway point for the Esquimalt and Nanaimo Railway, and will undoubtedly be the southern terminus of the Canadian Northern Railway.

"Most of the agricultural, mining and lumbering products of the island will find their way to Victoria and be shipped to the Canadian or foreign markets from this port. The importance of this trade, which is already very great, cannot be better illustrated than by the statement that the Island of Vancouver covers an area of 15,000 square miles, and that its resources—timber, mines, fisheries—are capable alone of maintaining a population of several millions of people, and by the further statement that within two years there will be not less than 400 miles of railways in operation on the island.

"The Inner Harbor of Victoria extends from Shoal Point on the east side, and Berens Island on the west side to the end of James Bay in an easterly direction, and to a little more than a mile to the Selkirk Waters in a northerly direction, a further distance of another mile."

Splendid sites for manufacturing can be had along this harbor, and the traffic now carried on from it is of immense and increasing value. Already huge cargoes are taken out to sea from it, and with the Dominion Government's extensive improvements it will become a channel of trade whose value will be enormous to all of Western Canada."



VICTORIA'S INNER HARBOR FROM THE CAUSEWAY

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### WHITE PASS AND YUKON ROUTE DENY REPORTED PURCHASE BY THE G. T. P.

We have received the following letter from the president of the White Pass & Yukon Route, Mr. O. L. Dickeson, and must state that the daily press is very often apt to give too much stress to rumors which are not always even well founded.—Ed. Note.

#### WHITE PASS & YUKON ROUTE

Office of the President

Vancouver, B. C.

At Seattle, Wash., Oct. 3, 1912.

Pacific Marine Review,

379 Arcade Annex, Seattle, Wash.

Dear Sirs:

Your letter of September 25th, in reference to the reported sale of the White Pass & Yukon Route to the Grand Trunk Pacific has been received.

I do not know where this rumor originated but would like to take this opportunity of officially denying it. There has not been at any time in the past, nor are there at the present any negotiations looking to the disposal of our property, nor would we entertain an offer for its purchase. Quite to the contrary, we have an undying faith in the future prosperity of the country contiguous to our line. Last April we successfully organized and placed in operation a development company known as the Atlas Mining Company, which has shipped over 22,000 tons of copper ore from the White Horse district during the period from April to September 1st, this year.

We now have plans under way for the construction of a tourist hotel on Lake Atlin, B. C., which will be ready for use next season.

We are building river steamers to be placed on the Yukon river between Dawson and Fairbanks, Alaska, which will extend our line 800 miles.

The road has handled a greater tonnage this year than ever before since its inception and we are looking forward to much better business next year. Yours truly,

O. L. DICKESON,  
President.

#### MARINE INSURANCE NOTES

A recent issue of *Fairplay*, London, has the following:

"In spite of the slackness of business, there have lately been several casualties that are likely to run away with a good deal of premium, while on all hands the claims, apart from total losses, are said to be heavy. Especially is this the case in particular average claims on steamers for time, the bill for both labor and material showing a very large increase on that of two years ago. The most serious casualties have been those to two American steamers trading on the Pacific side of the United States. The first of these was the "Pleiades," ashore near the entrance to the Gulf of California, her value being £41,000, and the other the "Newport," sunk alongside the wharf at Panama, her value, although thirty years old, amounting to £60,000. These values per ton may seem heavy, but it must not be overlooked that the cost of repairs on the Pacific slope is about three times greater than would be the case in the United Kingdom. When the Panama Canal is opened for traffic, underwriters will no doubt bear that fact in mind."

Of these two steamers the *Pleiades* has been floated and taken to San Francisco. The cargo has been discharged and the steamer placed on dry dock. Surveyors estimate the cost of repairs at between \$60,000 and \$70,000, with a loss of time of about 60 days.

It is quite true that the cost of repairs on this coast is very much in excess of the prices prevailing in Great Britain, but why the opening of the Panama Canal will be the cause of drawing the attention of underwriters to this

fact is not so easy to see. Certainly the fact is patent enough as it is, and it is natural to suppose that if the yards on this coast are called upon for more work of this kind due to an increased number of ships plying to our ports then either there will be an increase in the number of repairers, thus creating greater competition and reduced prices, or else the yards now in existence will have sufficient work to warrant some reduction.

It must be borne in mind that skilled mechanics on this coast command and receive higher wages than those in almost any other part of the world, and further that much of the structural steel required in the repair of steamers must be brought from mills on the Atlantic at great expense. If the opening of the Panama Canal results in all that is claimed by the shipping interests, which is doubtful, there will be an influx of mechanics which will produce, what is most to be desired, a competition in labor which, more than anything else, will cause an equalization of costs in the repairs of vessels.

The "Newport" has not, at this writing, been raised, but it is confidently expected that she will be about the middle of the month. The cargo of this boat is generally conceded to be practically a total loss, as it consisted principally of goods subject to great damage by being immersed in salt water. Further than this, it is known that the steamer is sunk in sand and mud and what is not ruined by salt water will be so covered with mud as to make the loss very heavy.

#### MARINE MISHAPS

"FITZCLARENCE," Br. str., at San Francisco Sept. 11th, discharging cargo of sulphur and coal, was on fire in No. 2 hold and it was necessary to flood the hold to extinguish the flames. In doing this the engine room was also flooded.

"MONTARA," str., went ashore on Goat Island, San Francisco harbor on the morning of Sept. 25th, but was floated without damage.

"MANCHURIA," str., at Hong Kong, Sept. 28, had cargo on fire, but it was extinguished with but little damage. Reported about 70 double bales of gunnies damaged by water. The steamer left Hong Kong on schedule time.

"YOSEMITE," str., while crossing out of Grays Harbor on Oct. 2nd, struck the bar and damaged the rudder, which afterwards carried away. Passengers were taken off by the steamer "Beaver" and the steamer was towed to San Francisco by the steamer "Klamath," assisted by the steamer "Bee." Vessel valued at about \$120,000, insured in the San Francisco market.

"VANGUARD," str., while crossing out over the bar at Hoquiam, Oct. 4th, for San Francisco, struck the bottom and suffered some damage. Steamer was docked at San Francisco for examination and repairs.

"PLEIADES," str., before reported ashore near Cape Lazaro, was successfully floated and proceeded to San Francisco under her own steam. Repairs will cost about \$70,000, and will take about 60 days.

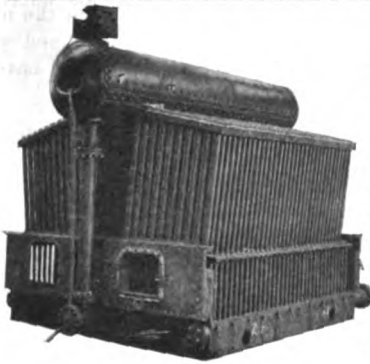
"NEWPORT," str., before reported sunk at Balboa, had not been floated up to Oct. 10th. It was then expected that she would be raised on the 12th.

#### REGISTRY OF FOREIGN-BUILT VESSELS

The following is of interest to shipowners:

The Commissioner of Navigation is specially charged with the decision of all questions relating to the issue of registers of vessels (act of July 5, 1884, Sec. 2), and correspondence concerning the issue of registers to foreign-built vessels will be conducted by or through collectors of customs with him. In the case of an application for the registry of a foreign-built vessel under the Panama Canal Act the following procedure will be observed:

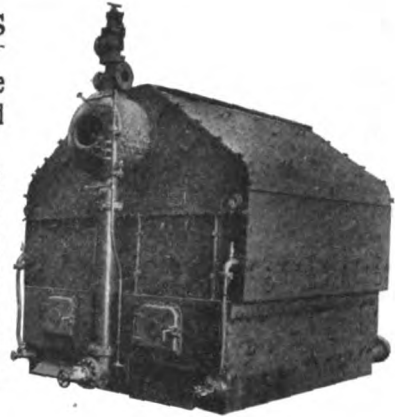
## Ballin Water Tube Sectional Boilers



Installed and Building for Steamers where economy, weight, accessibility, space and efficiency are of consideration.

	I. H. P.
H. B. Kennedy .....	2600
Athlon .....	600
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P. S. Michie .....	2000

The U. S. Government adopted Ballin Boilers for the sea-going dredge "P. S. Michie" after its experts had thoroughly investigated their construction and performances.



**Ballin Boilers are built of Seamless Steel Tubing and the Best Material Money Can Buy**

We refer by permission to the records of the Seattle Construction & Dry Dock Co. and the Inland Navigation Co.

**S. S. H. B. KENNEDY**, Total Heating Surface, 7720; Max. I. H. P., 2630. Using only one boiler, 3860 H. S.; Max. I. H. P., 1323.

**S. S. SIOUX**, 6000 sq. ft. H. S. (— Boilers); Max. I. H. P., 1340.

**S. S. SOL DUC and KULSHAN** have duplicate engines.

**S. S. KULSHAN**, 5000 sq. ft. — Boilers—1200 I. H. P. on trial; speed, 13 knots.

**S. S. SOL DUC**, 5000 sq. ft. Ballin Boilers—1531 I. H. P. on trial; speed, 15.6 knots.

Ballin Boilers have no fittings in fire, no hand hole gaskets to leak, do not go to pieces with salt in feed water, and their workmanship and performance are guaranteed.

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**THE CHEAPEST, SIMPLEST AND ONLY WAY TO BURN LIQUID  
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**No Steam Nor Air Compressor Necessary**

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We will defend at our expense any suit at law which may be instituted for infringement against the use of our High Pressure Oil System.

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1. In lieu of the builder's certificate, the original or a certified copy of the ship's foreign register will be filed with the application.

2. The measurement laws of the United States and of the principal maritime nations are substantially the same, and the measurement, preliminary to the issue of the register, should accord substantially with the foreign register and certificate of measurement. Any material difference will be reported to the Commissioner of Navigation.

3. The local inspectors of steam vessels on application before the issue of a register will inspect the vessel so far as may be necessary to determine that it is "safe to carry dry and perishable cargo," and if they find the vessel meets this requirement they shall file a certificate that under section 5 of the Panama Canal Act the vessel is "safe to carry dry and perishable cargo." This inspection and certificate are to determine the eligibility of the ship to registry under the act. They do not supersede the full inspection and certificate required subsequently under the inspection laws in the case of steam vessels.

4. Only foreign-built vessels "not more than five years old at the time they apply for registry" are eligible under the act. The date of build will be taken from the foreign register.

5. The ownership and citizenship of owners will be established as in the case of vessels built in the United States.

6. In the case of corporate ownership, the applicant will furnish a certificate as to the organization of the corporation and the names of its president and managing directors from the secretary of state of the state with whom the articles of incorporation are filed. The citizenship of the president and managing directors will be established as in the case of individual owners of vessels built in the United States.

7. Every register issued pursuant to the act shall carry on its face the following notation in red ink:

Issued pursuant to section 5 of the Panama Canal Act, entitling the vessel to engage only in trade with foreign countries or with the Philippine Islands and the islands of Guam and Tutulla. This vessel shall not engage in the coastwise trade.

This notation must appear in similar manner on all subsequent registers.

8. The provisions concerning foreign-built yachts are also included in section 37 of the tariff act of August 5, 1909.

9. The provisions relating to free materials, amending sections 19 and 20 of the tariff act of August 5, 1909, are administered by the Secretary of the Treasury.

10. The provisions relating to the Ocean Mail Act of 1891 are administered by the postmaster general.

BENJ. S. CABLE, Acting Secretary.

#### LEGISLATION AFFECTING CALIFORNIA INTERESTS PASSED AT LAST SESSION OF CONGRESS

The Chamber of Commerce of San Francisco has received from William M. Bunker, its representative at Washington, the following summary of legislation, affecting California interests, passed during the session:

Hon. M. R. Robbins, Jr., President San Francisco Chamber of Commerce.

Dear Sir:

I have the honor to review the work of the second session of the 62d Congress in which the San Francisco Chamber of Commerce is directly interested. The passage of the bill making the Panama Canal a free waterway for coastwise shipping and exempting the canal from railway domination was a distinct triumph for the Chamber as the first and foremost advocate of these policies.

#### Growing Importance of the Department of Commerce and Labor

The Department of Commerce and Labor has always been handicapped by the lack of congressional appreciation. Previous congresses have failed to grasp the commercial importance of the department, and for this reason it has suffered from inadequate appropriations. The legislative act (H. R. 26,371) consolidates the Bureau of Manufactures and the Bureau of Statistics into one bureau, to be known as the Bureau of Foreign and Domestic Commerce. This new bureau will be in close touch with the commercial interests of the country, and through its agency these interests will be practically and promptly served. The plan and scope of bureau work are based on a careful study of commercial conditions at home and abroad and cover the assured expansion of trade through the use of the Panama Canal.

Among the items in the general appropriation bills affecting the shipping interests of California are the following:

##### Naval Bill

Naval training station.....	\$ 70,000
Site for radio station, California part of.....	400,000
Navy Yard, Mare Island.....	80,000
Naval magazine, Mare Island.....	26,600
Fuel ship to be built in navy yard on Pacific Coast .....	1,140,000
Four submarine torpedo boats for coast.....	2,240,000
Buildings, naval training station.....	1,500
San Francisco sub-treasury .....	100,000
Improving Humboldt Harbor .....	250,000
Improving channel over Pinole Shoal.....	122,000
Point Loma light station.....	17,500
Surveys on Pacific Coast.....	165,000
Fish cultural stations .....	5,280
waterbarge for immigration station.....	3,000

##### The Rivers and Harbors Bill

Improving Los Angeles Harbor, channel.....	25,000
Improving Los Angeles Harbor.....	327,250
Improving Monterey Harbor.....	200,000
Improving Oakland Harbor.....	130,000
Improving Petaluma Creek.....	90,000
Improving Sacramento and Feather rivers.....	65,000
Improving San Joaquin river.....	40,000
Improving Stockton Harbor.....	11,000

Surveys, preliminary to improvement, authorized at Belvedere harbor, Corte Madera channel, Los Angeles and Long Branch harbors, Crescent City harbor, Oakland harbor, Petaluma creek, San Diego harbor, Redondo harbor, San Luis Obispo harbor, San Rafael creek, Stockton and Mormon channels.

##### Miscellaneous

A bill which has passed the House, but which is still in the Senate, proposes regulations which will protect American shipping from foreign monopolies and shipping combines. No vessel included in such combines will be allowed entry to an American port.

Bills have been passed by the Senate and House differing only slightly in unimportant details to encourage repair work in American ship yards. The bills give register and enrollment to foreign vessels wrecked on the coasts of the United States or possessions, and salvaged by American citizens and repaired in American yards. It is assumed that repair work can be made an important factor in the profitable employment of American capital and labor.

Congress has legislated for better radio communication in the merchant marine and an improved lifeboat service for ocean steamers.

(Signed) WILLIAM M. BUNKER,  
Washington, D. C., Representative of the San Francisco Chamber of Commerce.

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**COASTWISE AND FOREIGN COMMERCE OF TACOMA,  
WASH., MONTH OF AUGUST, 1912**

Principal Foreign Shipments		
Articles—	Quality.	Value.
Flour, bbls.	65,522	\$ 262,869
Wheat, bu	103,870	91,199
Tobacco, lbs.	63,743	7,200
Tallow, casks.	134	3,664
Machinery, pkgs.	2,485	212,635
Plaster, tons	930	7,184
Acetate of lime, sacks.	1,122	4,675
Lumber, feet.	6,217,230	119,080
Leather, salt hides, pkgs.	500	5,000
Condensed milk, pkgs.	3,250	11,147
Domestic and sheeting, bales.	892	46,695
Box shoos, bdls.	10,780	8,743
Paraffin wax, boxes.	2,370	8,260
Cascara bark, sacks.	458	1,448
Sewing machines.	4,022	45,823
Autos	30	32,882
Copper bars.	1,010	36,650
Miscellaneous to British Columbia.		31,749
Miscellaneous to Japan, China, Manilla, South America and Europe		365,328

Total foreign shipments..... \$1,307,320

Principal Coastwise Shipments		
Articles—	Quality.	Value.
Flour, bbls.	34,127	\$ 148,872
Lumber, feet.	4,906,980	60,674
Coal, tons	11,877	52,646
Wheat, bu	26,300	30,040
Bullion, furnace prod.		55,214
Box shoos, bdls.	9,828	4,630
Feed, tons	1,182	27,298
Hay, tons	1,793	40,439
Salmon, cases	403	1,832
Miscellaneous to Alaska		63,452
Miscellaneous to California, Honolulu and New York.		133,955

Total coastwise shipments..... \$ 641,020

Total foreign shipments..... 1,307,320

Total shipments..... \$1,948,340

Coastwise Receipts	
Alaska	\$ 306,533
California	390,700
New York	61,500

Total coastwise receipts..... \$ 758,733

Foreign Receipts	
British Columbia	\$ 200,756
China and Japan	2,403,022
Europe	26,000

Total foreign receipts..... \$2,629,788

**COMMERCIAL MOVEMENTS AT PORTLAND, OREGON**

Compiled by the Portland Chamber of Commerce.

We publish herewith the domestic and foreign lumber shipments from Portland and the domestic and foreign shipments of grain for the month of September, 1912:

**Lumber Exports from Portland**

Foreign.		Domestic.		Since Jan. 1, 1912.	
September.	Value	Feet	Value	Feet	Value
10,264,904	\$113,661	85,419,574	\$ 934,666		
11,913,252	\$125,089	126,984,217	1,329,575		

**Wheat Exports from Portland**

Foreign.		Domestic.	
Bushels	Value	Bushels	Value
846,317	\$714,994	3,528,533	\$3,095,501
740,675	\$603,652	2,996,789	\$2,698,349

**Flour Exports from Portland**

Foreign.		Domestic.	
Barrels	Value	Barrels	Value
87,961	\$352,998	522,571	\$2,086,319
21,722	\$ 90,146	272,493	\$1,169,463

**Barley Exports from Portland**

Foreign.		Domestic.	
Bushels	Value	Bushels	Value
119,884	\$ 93,000	119,884	\$ 93,000

**Tonnage Entered at Portland**

September, 1912	88 vessels	125,582 tons
September, 1911	101 vessels	127,231 tons

**Tonnage Cleared from Portland**

September, 1912	80 vessels	118,582 tons
September, 1911	91 vessels	111,065 tons

**OFFICIAL STATEMENT OF THE CUSTOMS BUSINESS  
OF THE DISTRICT OF LOS ANGELES, CAL., DUR-  
ING THE MONTH OF AUGUST, 1912**

Collections	\$88,452.60
Imports	328,904
Exports	32,706

**Imports and Exports by Countries**

	Imports.	Exports.
Austria-Hungary	\$ 1,775	
Belgium	2,243	
France	20,664	
Germany	106,871	
Italy	14,938	
Spain	1,368	\$ 350
England	51,091	500
Scotland	13,317	
Ireland	8,375	250
Canada	31,388	13,843
Mexico	9,221	
Cuba	1,676	
Brazil	8,818	
China	3,543	
Hongkong	2,966	
Japan	25,988	
Other countries	34,584	

Totals ..... \$328,904 \$32,706

**Principal Imports**

Seeds	\$ 51,532
Spirits, wines and liquors, 23,869 gals.	31,014
Fertilizers	33,652
Tea, 100,621 lbs	30,874
Coffee, 88,046 lbs.	12,371
Earthenware	12,736
Olive oil, 5,638 gals.	8,137
Wire and manufactures of	6,151
Toys and dolls.	9,801
Chemicals and drugs	5,469
All other articles	127,157

Total ..... \$328,904

Dutiable ..... \$172,692

Free of duty ..... 156,212

Total ..... \$328,904

**Exports to Non-contiguous Territory of the United States**

Hawaii—	
Crude oil, 672,000 gals.	\$12,800
Distillate, 43,200 gals.	5,640
Totals, 715,200 gals.	\$18,440

**Movement of Vessels in Foreign Trade**

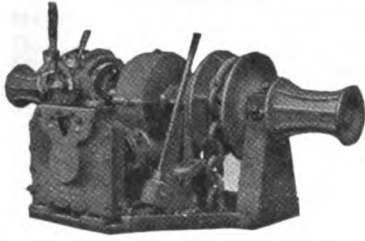
Entrance—		Net tonnage.
No.		
4	American	8,369
3	British	8,057
2	German	7,159
9	Total	23,585

Clearance—		Net tonnage.
No.		
2	American	4,802
1	British	219
3	Total	5,021

Number of seamen arrived	413
Number of seamen departed	121
Passengers arrived	15
Passengers departed	20

**Movement of Vessels in Domestic Trade**

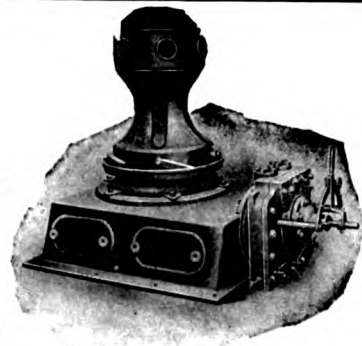
Entrance—		Net tonnage.
No.		
42	Steamers	79,803
	Number of seamen employed	3,738
	Number passengers arrived	31,723
Clearance—		
No.		Net tonnage.
14	Steamers	38,473
	Number of seamen employed	965
	Number of passengers departed	35,933



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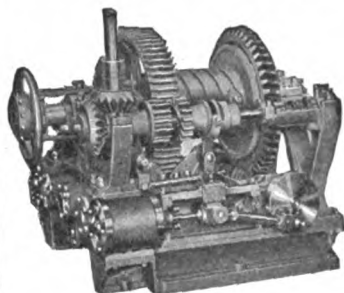
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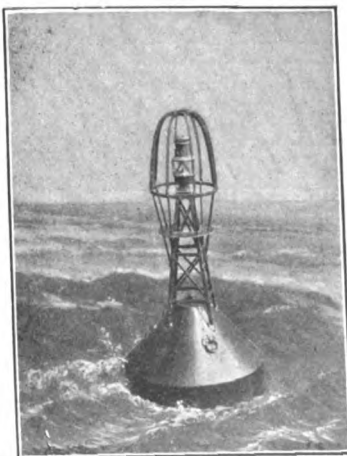
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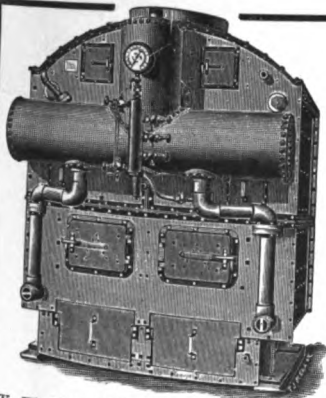
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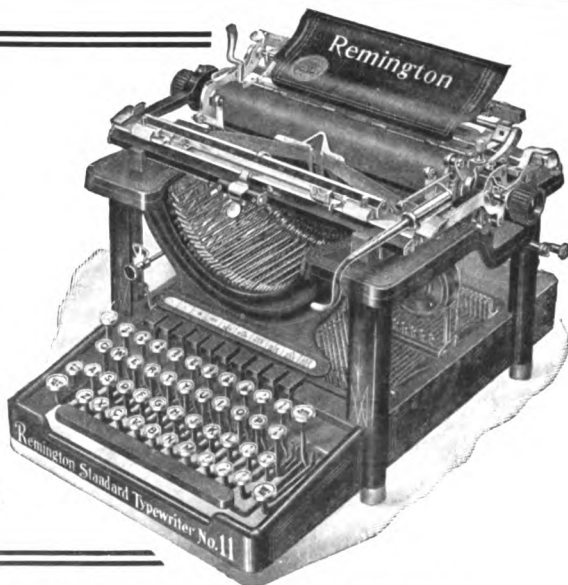
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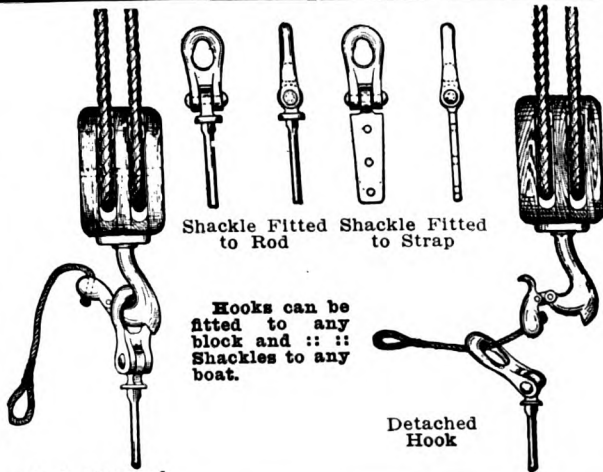
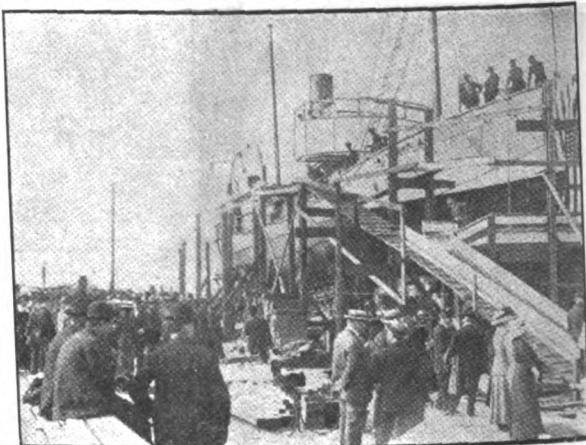
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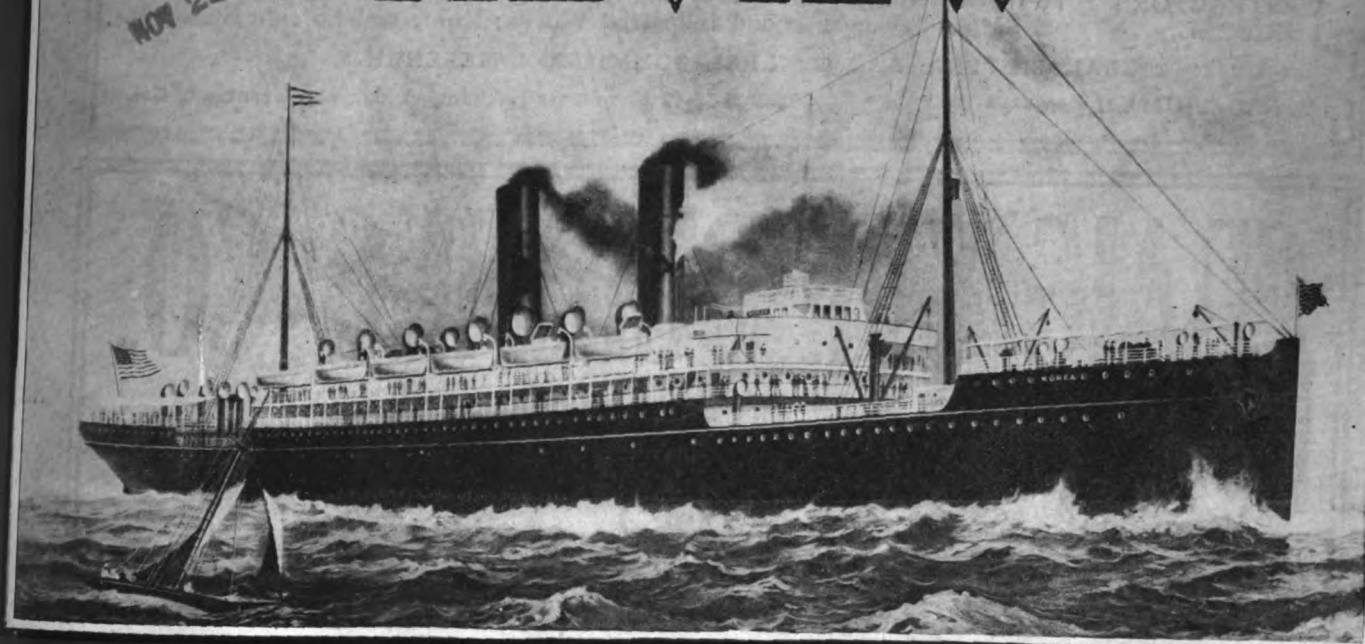
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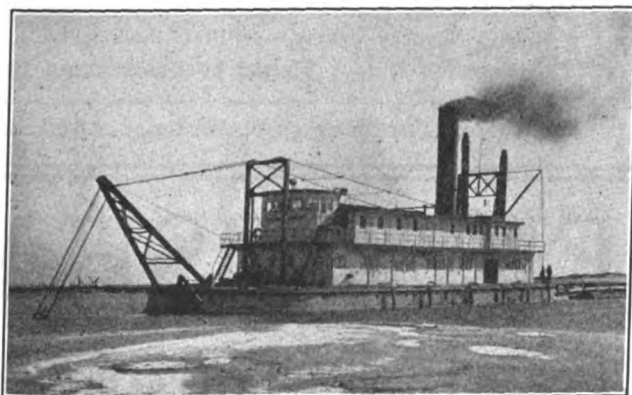
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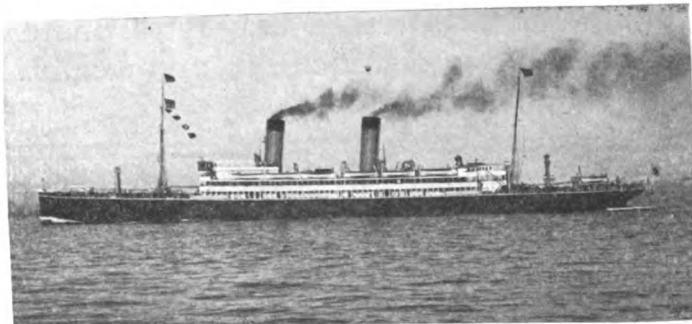
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# PACIFIC MARINE REVIEW

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VOL IX

SEATTLE, WASH., U. S. A., NOVEMBER, 1912

No. 11

## CANADIAN NAVAL PROGRAMME

Considerable uncertainty prevails as to the naval programme of the Borden administration, which will be a principal issue at the approaching session of Parliament in November. While we have no specific and authorized information beyond what has appeared in the daily press and public announcements by Premier Borden, it seems, as far as we can ascertain, that equally with his predecessor, Sir Wilfrid Laurier, Premier Borden is embarrassed by domestic political problems, and personally we fear that this programme will be a disappointment to the expectations of the general public of the United Kingdom.

Shorn of all sentiment, kinship, principle and international obligations, the commercial position, which really governs all international relationship, notwithstanding all contrary pretense, seems thus:

Canada borrows most of its public and private money from England, and further has a large export and import business with the United Kingdom and with other parts of the British Empire.

Shorn of all national pride, individual conceit and arrogance, and that peculiar capacity, including false pride and false pretense, which the Britisher has for suppressing disappointment and distress, Great Britain, the head of the British Empire, and every male and female therein, is taxed, publicly and privately, to meet the strain and aggression of Germany, the Triple Alliance and other European nations, reflected in their independent, but almost allied, great naval programmes.

The position in Europe, even excluding the present crisis in the Near East, becomes permanently more critical every day, almost every hour.

If Canada defers its assistance, in short permits its public men, be it Premier Borden or Leader of the Opposition Sir Wilfrid Laurier, to dispute over petty politics, petty patronage, in short, like the Roman Emperor Nero, to fiddle while Rome, the capital of the empire, is burning. Canada may, probably will, awaken some morning, in the early future, to find that a hostile army has succeeded in landing either in the United Kingdom or in some important part of the British Empire, such as India or Egypt, and that Great Britain has been mulcted, possibly crippled, by some large war indemnity, such as was imposed by Germany on France after the Franco-German war; after which, for many years to come, Great Britain and British investors could not continue to lend large sums of money, as at present, to Canada and other portions of the British Empire, without which all present progress and further development would cease; neither could France, which from present indications would probably be involved with Great Britain.

Therefore we urge Canada to promptly contribute the sum necessary for the construction of two first class battleships, equal to the most modern and powerful, which she can well afford, and to have them built where they can be built quickly and well. Some in authority at Ottawa claim that British yards have more work than they can complete; that we doubt, recalling the strenuous efforts of the Thames Iron Works Co., London, to secure participation in the British naval programme before it recently

defaulted. The principal point is that Canada should get at least two first class battleships, built well, quickly and at a reasonable price, though price is almost secondary to prompt delivery, and added, with proper reservations, to the British fleet for mutual defense. Therefore, if British naval shipbuilders, as the writer has been responsibly informed at Ottawa, but doubts, cannot give early delivery, why not secure tenders from the standard naval shipbuilders of the United States, whose work is equal to any. Such procedure would add to the good relationship of Canada, the United States and Great Britain.

Personally, we believe, and should always so urge, that in view of the great financial and commercial relationship between the United States, Great Britain and France, the United States could not permit either Great Britain or France, one or both, to be crippled by the imposition of some large war indemnity by any combination of European powers, and that the United States can always enforce the balance of power, as easily on the Mediterranean as anywhere else.

We invite criticism of this article from Canadian exchanges, Canadian ministers, members of Parliament, British exchanges, British ministers, British members of Parliament, domestic exchanges, U. S. naval shipbuilders, members of the Senate and House of Representatives.

H. B. JAYNE.

## GRAVING DOCK, ST. LAWRENCE

For several years past efforts have been made to secure the construction of a large dry dock on the St. Lawrence of sufficient capacity to receive the large steamers engaged in the Canadian Atlantic trades.

Up to the present time, and during the long term of the Laurier administration, although the emergency has been well recognized, nothing definite has been accomplished.

Several applications were filed under the present Act To Encourage Dry Docks, which is inadequate, inasmuch as it does not provide for the guarantee of principal as well as interest, penalties for non-procedure, or geographical distribution and limitation, but these have come to naught and failed through jealousies of rival ports, political petty patronage considerations.

The present administration, however, seems determined to attack the problem vigorously and without further delay, and, while no definite announcement has been made, it is believed that the dock will be built at Quebec by the Public Works Department.

Much credit is due to the Canadian Vickers Ltd., who, while others have for several years past made ponderous announcements of all they intended to do, went right ahead and have constructed a large floating dry dock which will shortly reach its station at Montreal and will form a valuable addition to the docking and repair facilities of that port, and in cases of emergency can be towed to other stations.

It is reported that when this dry graving dock is built at Quebec it will be operated by a joint committee representing the government and the steamship interests.

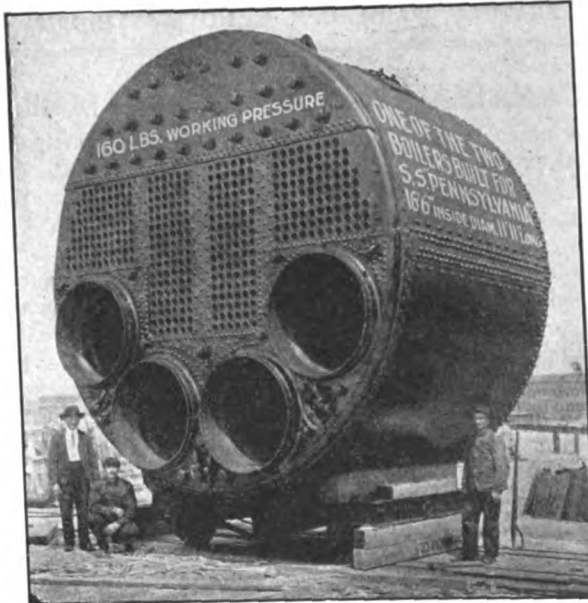


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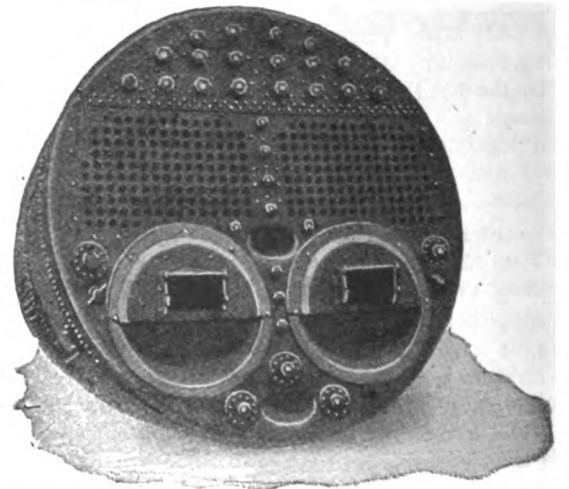
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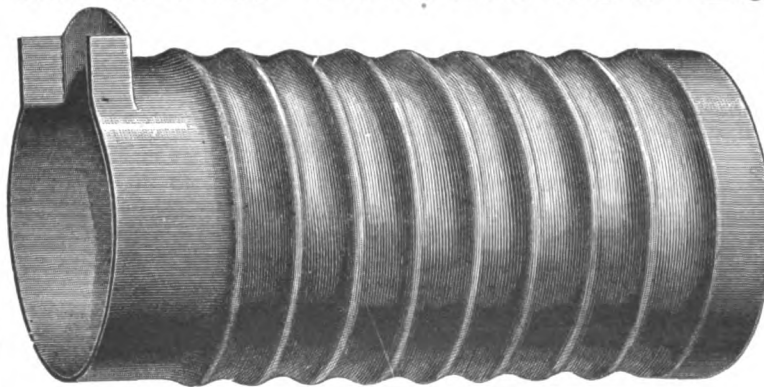
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## NEW EMPRESS STEAMERS FOR TRANS-PACIFIC SERVICE OF C. P. R.

THE "Empress of Asia" and the "Empress of Russia," which are now building for the trans-Pacific service of the Canadian Pacific Railway Company at the yards of the Fairfield Shipbuilding & Engineering Company, will have elaborate appointments and will be the largest fast steamers in service on the Pacific Coast.

These steamers, now on the stocks at Fairfield, are each 590 ft. in length, 68 ft. in breadth, 46 ft. in depth, with a gross tonnage of about 15,000. They will carry sufficient coal for the trip from Vancouver, B. C., to Nagasaki, together with about 3,000 tons of cargo deadweight and 1,500 tons of passengers' baggage, stores and fresh water. In their design there is a departure from current practice, for they are constructed with cruiser sterns and rudders entirely underhung. This form of stern, besides giving the vessels a very distinctive appearance, increases the effective length of the waterline and so assists propulsion, and adds considerably to the available deck areas at the after end.

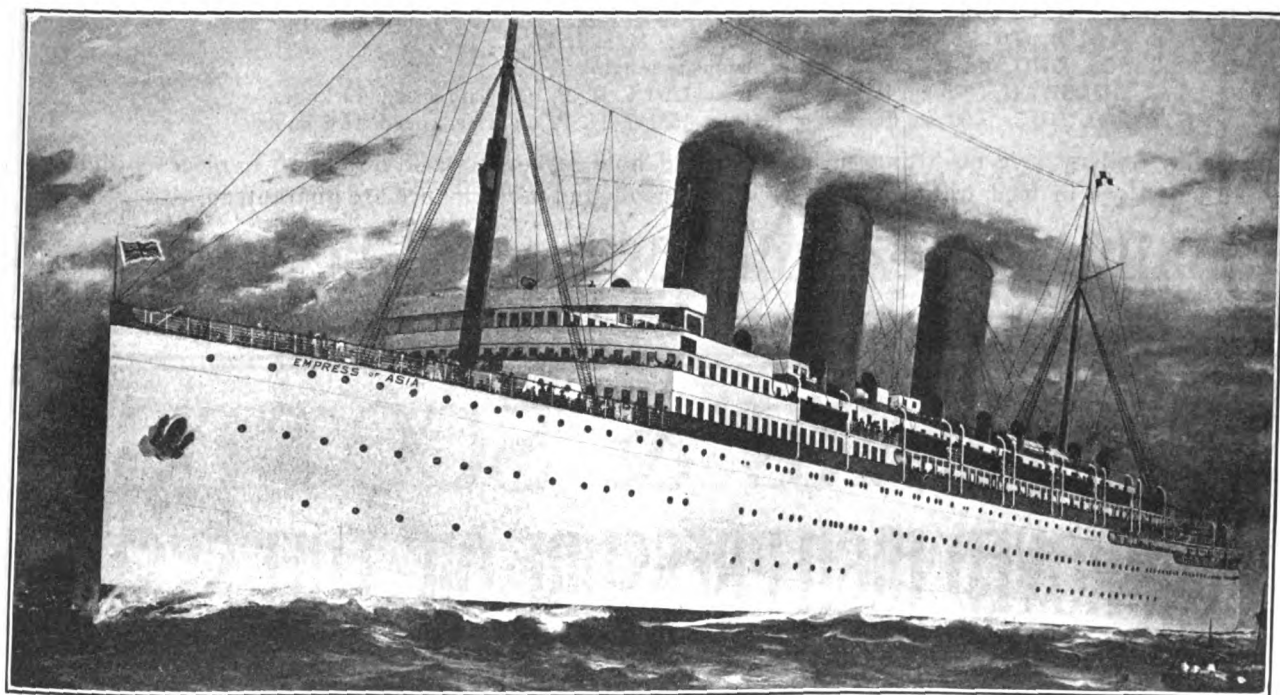
The vessels will have double bottom, orlop, lower, main,

from those for two and four persons to semi-private tables for six arranged in alcoves, and larger tables for other parties.

The first staterooms on the bridge deck are reached by ascending the grand staircase from the reception room. These rooms are enclosed in a complete steel staircase 340 ft. long. Each room is 10 ft. by 9 ft. and has sleeping berths for two persons and a couch so arranged as to be easily convertible into a bed.

A special feature of these staterooms is that the sleeping berths are so designed that should one passenger only engage the room, all evidence of the other berth is hidden, leaving only a single brass bedstead. A second feature is that two staterooms can be converted into one suite, with dressing room (with hot and cold water) adjoining.

Midway in the length of the deckhouse is the lounge, 48 ft. long by 36 ft. broad and 14 ft. high at the center. Further aft a writing room has been introduced, and in the aft end a smoking room and veranda cafe, occupying a space 57 ft. long, 43 ft. broad and 14 ft. high. Around the



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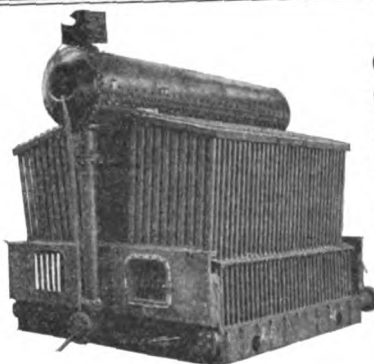
upper and shelter decks, and above the latter there is to be a long combined forecabin and bridge, the bridge deck being extended to the stern on stanchions. Above the bridge deck will be a promenade deck about 350 ft. long, on which will be the principal first-class public rooms, with officers' quarters and navigating bridge above.

Each vessel has been designed to accommodate 200 first-class, 100 Asiatic second-class and 800 Asiatic third-class passengers, besides a crew of 475 officers and men. Just forward of midships on the shelter deck is situated the first-class reception room and cafe, measuring 44 ft. by 64 ft., with large embarking gangways on either side of the ship. Access to all the first-class accommodation is gained by this reception room. Immediately forward on this deck are large staterooms for two and three persons. Adjoining the cafe on the aft side is the main saloon 74 ft. long and 64 ft. wide, lit from the sides by a number of beautifully designed windows nearly 5 ft. wide and from above by a well 26 ft. by 16 ft. To suit the demands of the various passengers different sized tables will be provided

deckhouse is an open promenade, with screen protection at the forward end, similar to one fitted on the bridge deck.

On the house top, with an internal stairway from the deckhouse on the promenade deck, a large gymnasium, 16 ft. long by 28 ft. broad, is fitted up with a large variety of exercising machines, including rowing, vibrator, astride and side saddle machines. The outstanding features of these vessels will be the size, design and quality of the public rooms, parlor suites, special and ordinary staterooms, also the large proportions of the second-class and Asiatic accommodation. The public rooms in the one ship will be of "English" design, and the other of "French" design. Each first-class room or public room can be heated and ventilated on the thermo tank principle, as can also the second and steerage accommodation, about 20 of these tanks being distributed throughout the length of the vessels. Natural ventilation has also been provided in various sections. Electric radiators and electric fans can also be used in the state or public rooms should the conditions so demand. The electric generating plant, consisting of five

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The U. S. Government adopted Ballin Boilers for the sea-going dredge "P. S. Michie" after its experts had thoroughly investigated their construction and performances.



**Ballin Boilers are built of Seamless Steel Tubing and the Best Material Money Can Buy**

We refer by permission to the records of the Seattle Construction & Dry Dock Co. and the Inland Navigation Co.

**S. S. H. B. KENNEDY**, Total Heating Surface, 7720; Max. I. H. P., 2630. Using only one boiler, 3860 H. S.; Max. I. H. P., 1323.

**S. S. SIOUX**, 6000 sq. ft. H. S. (— Boilers); Max. I. H. P., 1340.

**S. S. SOL DUC and KULSHAN** have duplicate engines.

**S. S. KULSHAN**, 5000 sq. ft. — Boilers—1200 I. H. P. on trial; speed, 13 knots.

**S. S. SOL DUC**, 5000 sq. ft. Ballin Boilers—1531 I. H. P. on trial; speed, 15.6 knots.

Ballin Boilers have no fittings in fire, no hand hole gaskets to leak, do not go to pieces with salt in feed water, and their workmanship and performance are guaranteed.

**Ballin Water Tube Boiler Co. Portland, Ore.**

# MOORE & SCOTT'S IMPROVED HIGH PRESSURE OIL-FUEL SYSTEM

Patents Pending

**THE CHEAPEST, SIMPLEST AND ONLY WAY TO BURN LIQUID  
OIL UNDER MARINE BOILERS**

**Absolutely Noiseless**

**No Steam Nor Air Compressor Necessary**

**Results Guaranteed**

## MOORE & SCOTT IRON WORKS

SAN FRANCISCO

We will defend at our expense any suit at law which may be instituted for infringement against the use of our High Pressure Oil System.

WHEN WRITING TO ADVERTISERS, PLEASE MENTION THE PACIFIC MARINE REVIEW



independent sets of engines and dynamos, provides a complete system of electric lights, radiators and power for the large stokehold fans, also for the ventilating fans throughout the ship, and the silent working cranes and winches for rapid handling of cargo. Signaling at sea can be carried on by a semaphore on the bridge of the type used in the British admiralty for short distances, while the equipment includes the long range Marconi system.

The officers' accommodation and navigating bridge forward on the house tops have received special consideration in view of the length of the voyage and the variety of climates the ship will pass through. All the latest devices for the quick handling and control of the vessel have been installed. A dining room served by an electric lift from the ship's main pantry, and a cosy smoke room are among the arrangements provided to conduce to the officers' comfort. The crew and petty officers will be berthed on the upper deck forward, 500 steerage passengers being carried on the same deck. Stewards and firemen are accommodated on the main deck aft, the forward section being taken up by the mail room and steerage. Within easy reach of the promenade on the shelter deck are the engineer's quarters, so arranged as to give the maximum comfort to the engine room staff in hot weather.

The propelling machinery of the two vessels will consist of four turbines of the Parsons type, embodying the most recent improvements in design and construction to ensure the maximum economy of fuel consumption on service attained. The port wing shaft will be driven by a H. P. turbine, which will exhaust into a L. P. turbine, driving the starboard wing shaft. The two inner shafts are each driven by a L. P. turbine, which has a powerful astern turbine incorporated in the same casing.

The introduction of an I. P. turbine to the installation will provide a much wider range for the expansion of the steam and will effect a marked improvement in steam consumption as compared with the usual arrangement of turbines, driving either three or four shafts, hitherto adopted in large mail steamers and naval vessels. Hitherto these have been fitted with either one H. P. turbine exhausting to two L. P. turbines, or two H. P. turbines exhausting to two L. P. turbines.

For maneuvering, when entering or leaving harbors, independent high-pressure steam connections are provided on each L. P. ahead turbine. An independent high-pressure steam connection has also been provided on the L. P. turbine, which, combined with a suitable arrangement of valves, enables the H. P. turbine to cut out, or should the I. P. turbine be out of action, the H. P. turbine can exhaust direct into one or other or both of the L. P. turbines.

The four turbines are situated in one watertight compartment and in a separate compartment immediately aft, the two condensers of the Weir Uniflux type, are placed, together with the circulating pumps, Dual type wet and dry air pumps, evaporators and distillers.

The circulating pumps and air form two distinct and separate sets, each set working in conjunction with one condenser, and independent of the other, but are also arranged with suitable cross connections so that either set of pumps can, in case of emergency, work in conjunction with both condensers. The installation of auxiliary machinery is exceptionally large, and, as in the case of the turbine installation, has been designed with a view to securing the greatest economy in fuel consumption and convenience in working. The feed water system for the boilers comprises two twin filters of the gravitation type, through which the water from the air pumps is discharged on its way to the hotwell tanks; two hotwell pumps, which discharge the feed water, first through a surface feed water heater and afterwards through a contact feeder, from which the four feed pumps take their supply and discharge

direct to the boilers. The feed water is heated by the exhaust steam from the auxiliary machinery throughout the ship, the steam from the ship's heating systems and drainage systems from steam pipes, etc. The system evolved is the result of careful consideration and will insure that all waste heat from the auxiliary steam and exhaust systems are utilized in heating the feed water instead of the heat being carried away by the circulating water from the condensers.

For harbor use a separate auxiliary condenser with circulating pump, air pump, feed filter and feed pump, is fitted to admit of the corresponding auxiliary machinery used on service, being opened out for cleaning and examination as necessary. All the bearings for the turbine and line shafting are connected to the forced lubrication system and the oil supply is maintained by four large oil pumps, which discharge the oil through special coolers before entering the bearings. Separate pumps are fitted for circulating cold sea water through the oil coolers. Drain tanks, into which the oil gravitates from the bearings and settling tanks for separating any water or impurities from the oil, are fitted in the condensing room. The pumps for ship's service consist of two general service pumps, three sanitary hot and cold water pumps, two bilge pumps, two fresh water pumps and a ballast pump.

The refrigerating machinery and electric machinery are situated in a separate compartment aft of the condenser room. In view of the service in which these vessels are to be engaged, the installation of refrigerating machinery fitted is very large and comprises two machines of the CO<sub>2</sub> type (supplied by the Liverpool Refrigeration Company). The electrical generating machinery is being supplied by Belliss & Morcom and consists of four independent units, each of which comprises a compound wound dynamo driven by an enclosed forced lubrication compound engine.

Steam is generated in six large double-ended boilers and four single-ended boilers, situated in three separate compartments and working under the Howden system of forced draught; the air supply being maintained by well proportioned elliptical funnels, one for each boiler compartment, giving the vessel a strikingly handsome appearance. For dealing with the ashes at sea, ash ejectors are fitted in each stokehold and in each boiler compartment a specially designed ash ejector pump for supplying the water under pressure to the ejectors is fitted. Steam ash hoists of a silent type are also fitted in each boiler compartment for harbor service. The ash hoisting arrangements have received special consideration in order to minimize the noise which is so objectionable and this machinery has, therefore, been removed entirely from the vicinity of the passenger quarter.

It is also stated that the new steamships will be equipped with all the other latest devices making for safety, including wireless apparatus, searchlights, submarine signals, and from the moment they are assembled the members of the crews will be trained in the life-saving, fire and other drills which have been a feature of this company's steamships for so long.

Canadian Pacific officials believe that the introduction of these new boats into the service between Canada and the Orient will mark a new epoch in traffic on the Pacific. Certain it is, that whatever other results are felt, all present records for fast voyages between Canada and Japan and China will be considerably lowered. The "Empress of Japan" at present holds the record for the fastest voyage across the Pacific, having made the distance between Vancouver and Yokohama in 10 days 10 hours and 4 minutes, and between Vancouver and Hongkong in 17 days 10 hours and 16 minutes, inclusive of stops. The "Japan," however, has only a contracted speed of 18 knots on the measured



mile and 16 knots on a sea trip, while the new "Empress" steamers are designed for a speed of 20 knots per hour. This great advantage in speed will undoubtedly mean a big reduction in the duration of a trans-Pacific voyage, and in fact, some shipping men are of the opinion that the "Empress of Russia" will cut almost 24 hours off the "Empress of Japan" Vancouver-Yokohama record.

When the "Empress of Russia" and "Empress of Asia" are delivered at Vancouver, the Canadian Pacific will have five liners operating between Canada and Japan and China—the four "Emperesses" and the "Monteagle."

#### PROSPEROUS CONDITION OF JAPAN SHIPYARDS

The Mitsu Bishi Dockyard and Engine Works at Nagasaki is the largest shipbuilding plant in Japan, and to handle the increased work, is making extensive improvements and additions to its plant. The work of reclaiming 470,000 square feet of ground from the harbor in front of its plant is about finished. The company has just erected a large guantree to be used in the construction of a 27,500-ton armored cruiser. This giant gauntree is at present the largest in the Orient, the length over all being 790 feet, the width inside of towers clear 116 feet, and the height from the ground to lower crane rail 133 feet 4¾ inches, and to upper crane rail 155 feet 6¾ inches. There will be one 30-ton, two 10-ton and four 5-ton cranes mounted in the structure, which was completed August 1, 1912, at a cost approximating \$250,000.

The vessels completed and turned over to their owners by the Mitsu Bishi Dockyard and Engine Works during the first half of 1912 were the "Yokohama Maru," of 6,469 registered tons and 5,618 indicated horsepower, for the Nippon Yusen Kaisha, of Japan, and the "Himeshima Maru," a steam trawler of 234 tons and 461 indicated horsepower, for the Kihel Goshi Kaisha, of Japan.

The vessels under construction at the yard on June 30, 1912, were: The second-class 5,000-ton cruiser "Yahagi," for the Japanese navy, which was turned over to the government on July 27; the 780-ton gunboat "Yung Fung," for the Chinese Navy, which will be completed the latter part of the present year; the 27,500-ton armored cruiser "Kirishima," for the Japanese Navy, whose keel was laid on March 16, 1912; a shelter-deck steamer of 9,200 tons gross, 6,600 indicated horsepower, and fitted with geared turbines, for the Toyo Kisen Kaisha; a full scantling steamer of 10,900 tons gross, 10,000 indicated horsepower, fitted with combined system of Parsons turbines and reciprocating engines, for the Nippon Yusen Kaisha; 2 steam trawlers of 250 tons each and 620 indicated horsepower; 2 steam cutters for the Japanese Navy and 1 steam cutter for the Chinese Navy; and 1 motor launch for the shipyard's own use.

The "Kirishima" is to be a sister ship of the cruiser "Kongo" launched May 18, 1912, at Vickers & Maxim's shipyard, Barrow, England, for the Japanese Navy. The engines are of 64,000 indicated horsepower and the speed will be 27½ knots. The cruiser will carry eight 14-inch, sixteen 6-inch, and twenty 3-inch guns; the crew will consist of 1,100 officers and men. The principal armament for this vessel will probably be constructed at the Muroran Steel Works in the Hokkaido (northern Japan).

The 5,000-ton cruiser "Chikuna, 26 knots speed, built at the Saseho navy yard, near Nagasaki, was completed and went into commission the latter part of May, 1912. The Saseho navy yard now has the largest dry dock in Japan, and perhaps in the Orient. It is 777 feet long, 111 feet wide at bottom, and 38 feet deep over keel blocks. Work is progressing on the concrete pier for the government, which will accommodate 8 large battleships at one time. It will take several years to complete it. The work of enlarging the machine shops is progressing steadily.

#### SCHOONERS "BAY STATE" AND "KNICKERBOCKER" TO BE OIL BURNERS

The New England Fish Company of Boston, with offices in New York, Seattle, Vancouver and Ketchikan, Alaska, is having built at the yards of Arthur B. Story, in Essex and Gloucester, Mass., two sister schooners of a modified knock-about type, 126 feet length over all; 102 feet length waterline; 24½ feet breadth waterline; with a mean draft of 10 feet, to be powered with two 100 h. p. Blanchard oil engines, operating twin screws and developing a speed under power alone of about 10½ miles an hour. They will have plain pole masts with no topmasts, and the sail area will be cut down to 4,500 square feet, less than one-half that with which boats of this size would be normally equipped. Briefly the sails are to be used only as auxiliaries to the engines, which are a late development by the Blanchard Machine Company, under the direction of Wolcott Remington. They are of particular interest in that they will use for fuel a low-grade, asphaltum-base oil that is put out by the Standard Oil Company on the Pacific Coast as Star Fuel Oil. It costs only a dollar (4/2) a barrel in Seattle, and its high-flash point makes it as safe as coal.

After the engines have been installed and the rigging and outfitting completed, the two schooners will proceed to Seattle via Cape Horn, arriving here in time for the early spring work of next year.

The schooners were designed by Thomas F. McManus of Boston. He has been prominently connected with the New England fishing industry for fourteen years, thirteen years as an active participant and the remainder as a designer of fishing schooners, and in that time has built and designed over three hundred vessels.

The original type of fishing schooner was shallow draft with long bowsprit and jib boom and very long main boom, giving it a long sail base line extending far outboard, making the work of handling sails in heavy weather exceedingly dangerous. In fact, the chance of wreck in storms was one of the most serious that fishermen of those days took; but now all this has been changed, and the production by Mr. McManus, several years ago, of the knock-about type, with its deep and sharp hull lines, short sail base and eliminated bowsprit, has made these boats safe and easy to handle in heavy seas. There is less pitching and great saving of wear and tear on the rigging; no bobstays to leak; no bowsprit to loosen; and, with practically no overboard work for the men to do in handling sails, they now fear only fog, collision and shore.

On the Pacific Coast the need for this step has been imperative, and the results achieved by these vessels will be watched with interest, not alone here, but on the Atlantic Coast as well, for the increasing need of power is being strongly felt by the Boston and Gloucester fishermen.

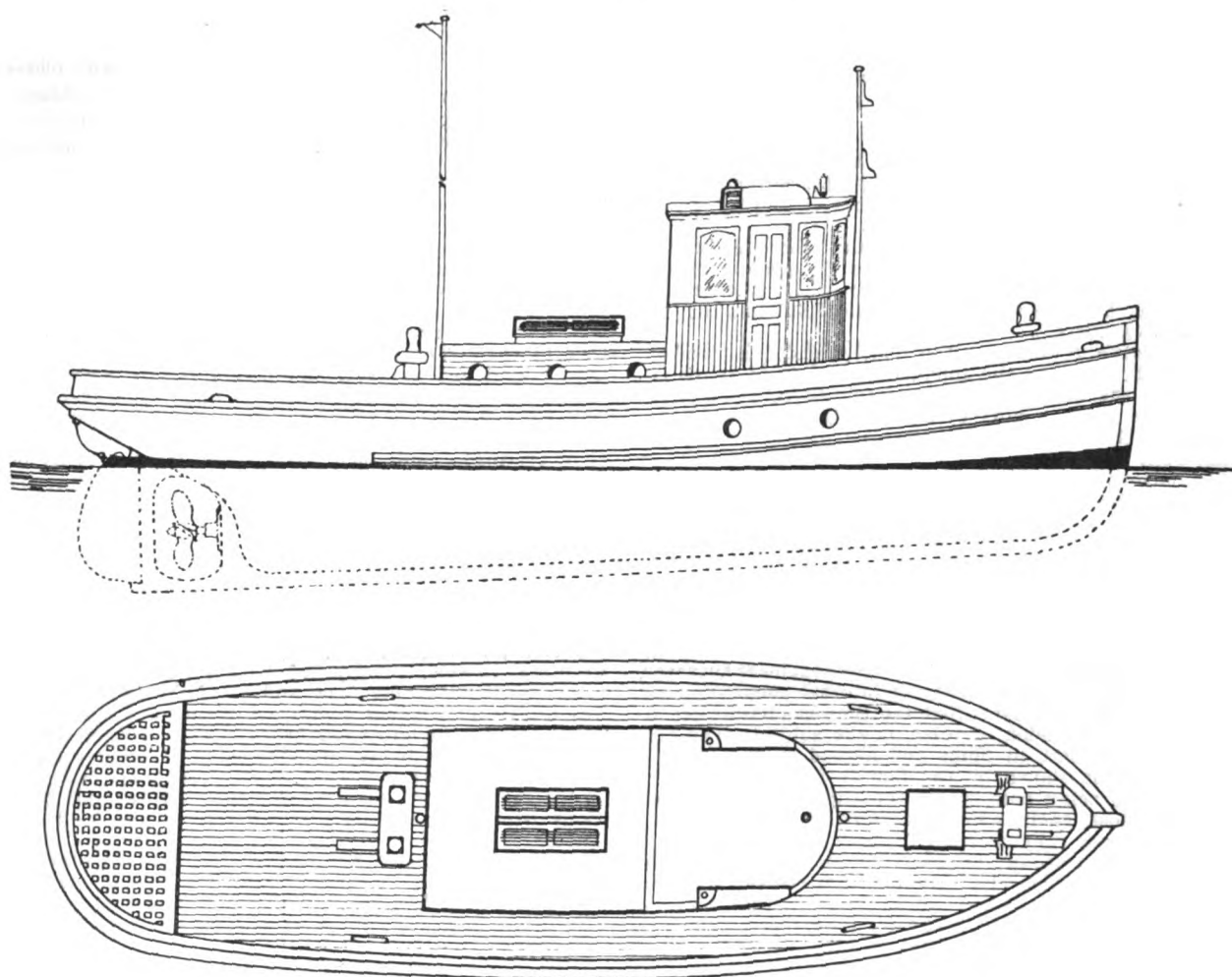
#### MOORE & SCOTT BUILDING FERRY FOR WESTERN PACIFIC RAILWAY COMPANY

At the Moore & Scott yards, Oakland Harbor, a new steel ferryboat for the Western Pacific Railway Company is being built. The keel has been laid and in about seven months this vessel will be plying between San Francisco and Oakland.

The new ferryboat is 230 ft. long over all, 62 ft. 6 in. beam, with a moulded depth of 19 ft. 6 in. She will be driven by propellers and will be equipped with Moore & Scott's high-pressure oil fuel system.

In appearance the new steamer will resemble the boats of the Key Route, though much stronger and speedier.

In the line of dry dock and repair work Moore & Scott have been especially busy, but report a great scarcity of ship caulkers, carpenters and fitters.



#### NEW MOTOR TOWBOAT

The Bayonne Launch Company, of Bayonne, N. J., is building a new design of towboat, illustration of which is shown above. This boat is 40 ft. overall by 11 ft. beam; was designed and is now being built by the above named company; her draft is 4 ft. 6 in.; keel, stem, stern and frames are all of heavy oak; planking of long leaf yellow pine, and is fastened with galvanized iron; the boat is powered with a 54 h. p. Buffalo motor, which will swing a 42 in. diameter propeller; motor is so installed and the controls are so arranged that the boat can be handled from the pilot house by one man.

#### NEW CONTRACT AWARDED SEATTLE CONSTRUCTION & DRY DOCK COMPANY

The yards of the Seattle Construction & Dry Dock Company present a scene of activity in shipbuilding and other marine construction work. The large sea-going dredge, "Col. P. S. Michie," being built for the United States government, is well under way, and the work on the fast steamer "Tacoma" is progressing rapidly. In addition to these two vessels, the company has just closed a contract with D. C. Jackling, a wealthy mining man of Salt Lake City, for the construction of an ocean-going steam yacht to cost approximately \$300,000.00. This vessel will be of steel construction, twin screw and the finest of her class ever built on this coast. She will be 212 feet over all, 27 feet beam, 15.7 feet depth and capable of maintaining a speed of 18 knots an hour. The yacht will be propelled with two four-cylinder triple expansion engines and will have the Babcock & Wilcox boilers for burning fuel oil.

The work on the new 12,000-ton floating dry dock is progressing nicely and the company expects to have it in operation by the first of the coming year.

#### CONSTRUCTION UNDER WAY AT YARDS OF NEW YORK SHIPBUILDING COMPANY

We have received the following report on new construction from the above named company, under date of Camden, N. J., October 29, 1912:

- T. B. Destroyer "Downes," 300x30.6x17.1; 1019 tons.
- "El Segunda," bulk oil steamer, 330x46x27; 3662 tons.
- "Gulfoil," bulk oil steamer, 405x51x30.2; 5188 tons.
- "Washington Irving," Hudson river passenger steamer, 400x47x14.6; 5200 tons.
- "Oklahoma," battleship, 575x94.10x44.6; 27000 tons.
- "Vesta," bulk oil steamer, 330x46x27; 3500 tons.
- "Socony," bulk oil steamer, 330x46x27; 3500 tons.
- Collier, 319x48x29; 3700 gross tons.
- Two 16-car carfloats, 337x40.11; 1000 tons each.
- "Congress," passenger and freight steamer, 441x53x38.6; 7500 gross tons.
- Freight steamer, 344x47x35; 3500 gross tons.
- "Moreno," Argentine battleship, 594.6x98x45.5; 28000 tons.
- "Fei Hung," Chinese cruiser, 320x39x22; 3000 tons.

## LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING

Report of the Society's Operations During the Year 1911-12

We have received a copy of the above report from Mr. James Fowler, Lloyds' surveyor at this port, and from which we extract the following:

"At the close of the year ended June 30, 1912, 10,445 merchant vessels, registering about 21,750,000 tons gross, held classes assigned by the Committee of Lloyd's Register.

As compared with the figures for the preceding twelve months, the present return, following the general movement of the shipbuilding industry, shows an increase of 366,865 tons as regards steamers, and 2,825 tons as regards sailing vessels.

The society's returns for the quarter ended September 30, 1912, showed that the tonnage in course of construction under the survey of the society's surveyors was 1,820,392 tons gross, a number never before reached in the history of the society. Of this total 482,875 tons were being built abroad.

The advent of the Diesel engine for marine purposes was referred to in last year's annual report, and the success of the first vessels fitted with engines of this type has already led to a very considerable increase in their construction, more especially in Holland and Germany. This development has been watched by the committee with great care and interest, and the various problems attendant on the introduction of the internal combustion engine into sea-going vessels have received the close attention of Mr. Milton, the society's chief engineer surveyor, who has made a special study of internal combustion engines. It is felt, however, that the time has hardly yet arrived for the provision of rules on the subject. The confidence placed, both at home and abroad, in the society's requirements is shown by the fact that there are at the present time being built under the supervision of Lloyd's Register, Diesel engines for 34 vessels, 23 of which vessels are of tonnages ranging from 2,000 to 10,000.

These engines are of various types, including four stroke and two stroke cycle single acting, two stroke cycle double acting, and also of the "Junker" type. They range in power from 1,750 to 120 brake h. p. per set. There are also several sets of oil engines of other types for small vessels being constructed under the society's survey, ranging from 50 to 320 brake h. p.

In last year's report it was stated that the motor-vessel "Vulcanus," fitted with a four stroke cycle Diesel engine, had commenced work with promising results. This vessel has been running during the year, and the results of the working of the engines have been so satisfactory to the owners that they have now under construction with a view to classification in Lloyd's Register Book five other vessels of considerably larger size and with Diesel engines of greater power, which will be fitted by the same engine builders, the Nederlandsche Fabriek van Werktuigen en Spoorweg-Materieel, of Amsterdam. At the present time the society's surveyors have under inspection at these works 11 sets of Diesel engines intended to be fitted in six vessels, the aggregate power of the engines being 10,100 brake h. p.

The official trials of the oil-engined vessel "Fordonian," of 2,000 tons gross, have recently been carried out with successful results. This vessel, which has been built under the society's inspection by the Clyde Shipbuilding & Engineering Co., Ltd., is fitted with Diesel engines of the two stroke cycle type, of 750 brake h. p., and will be assigned the society's classification, "For Canadian Lake Service."

The other vessels referred to in last year's report are nearing completion. Some of them, like the "Fordonia," have two stroke cycle engines, and their performances, as compared with those of vessels fitted with the four stroke cycle engines already in service, will be watched with considerable interest.

The tendency towards the introduction of modifications in recognized forms of ship construction still continues, and the many proposals in this direction receive the careful consideration of the committee, who are always willing to place at the disposal of shipowners and shipbuilders the experience and advice of the society.

An increasing amount of tonnage is being built for the society's classification upon the Isherwood system of longitudinally framed vessels. Up to the end of June, 1912, 64 of the vessels, of 264,368 tons, had received the society's classification. Since that date no fewer than 114 such vessels, registering 593,400 tons, have been completed or

are in course of construction, under the special survey of the society's surveyors. From the earliest introduction of this type of ship construction, the society has given the most careful consideration to the details of the scantlings and arrangements of the Isherwood vessels in order to ensure their structural efficiency in accordance with the society's standard of classification.

The demand for new steamers intended for carrying oil in bulk, which last year was unusually brisk, has enormously increased.

Concurrently with the increase in the number of vessels under construction for carrying oil in bulk, there is a great development taking place in the use of oil fuel instead of coal. The society issued rules for the use of oil fuel as long ago as 1902, and within recent years a few vessels have been adapted for burning such fuel. The more extended use of this fuel has been under the consideration of shipowners for some time, and several vessels when originally built have been constructed with oil fuel bunkers (although not supplied with oil burning apparatus), so that the conversion from coal to oil fuel can easily be effected in the event of its being considered desirable.

Taking the United Kingdom alone, the following figures show the expansion which is now going on in the replacement of coal by oil. From January 1, 1910, to the present time, there have been completed, under the survey of the society's surveyors, 15 oil-carrying vessels, and 19 other vessels, constructed with oil fuel bunkers. Of these, 4 of the former type and 14 of the latter were not fitted with oil burning apparatus, whilst the remaining 16 vessels had complete appliances. At the present date, oil fuel bunkers are being constructed in 45 oil-carrying vessels and in 19 other vessels, all of which are being built under the society's survey. Complete oil burning installations will be fitted in 35 of the former and in 9 of the latter.

The society's rules for the burning and carrying of oil fuel are applicable to oil with a flash point not lower than 150 degrees F., and in all the vessels hitherto classed under these rules, as well as in most of those now in course of construction in which oil fuel is to be used the arrangements are suitable for this class of oil. Recently, however, there has been a great development in the supply of oil fuel with a lower flash point, and it is intended that this kind of oil shall be used on board 12 of the large oil-carrying vessels now being built. In these cases, the bunkers and arrangements have received the special consideration of the committee, who have approved plans providing for the special conditions which experience with the carriage of light oil has shown to be advisable. Should the use of low flash fuel oil for marine purposes become more general, the committee will prepare detailed rules on the subject.

The period under review has witnessed a notable extension of the society's operations in the United States of America. There are 40 vessels of 175,000 tons now in course of construction in that country for classification in Lloyd's Register Book, of which 17 of 63,000 tons are being constructed in the American shipbuilding yards on the Great Lakes.

Attention was directed in last year's report to the great development in the oversea carriage of frozen and chilled meat, dairy produce, fruit, etc. This development shows no signs of abating, and again this year there is a large increase in the number of vessels in respect of which the society's certificate of classification of Refrigerating Machinery (Lloyd's R. M. C.) has been issued. At the present time there are 161 vessels so classed in the society's Register Book, and on these vessels 929 periodical inspections have been held at both the loading and home ports during the past twelve months. In addition, there are 22 vessels under construction, the refrigerating machinery of which is being built under the inspection of the society's surveyors. The importance of these surveys, especially to shipowners and underwriters, will be appreciated when it is remembered that the 183 vessels mentioned above have insulated cargo chambers representing a total capacity of over 12,000,000 carcasses of mutton.

The increasing extent to which wireless telegraphy and submarine signalling are being used in passenger steamers is shown by the fact that there are now recorded in the society's Register Book 1,392 vessels fitted with wireless telegraphic installations as compared with 1,013 at this date last year, and 630 fitted with submarine sig-

nalling apparatus as compared with 566 last year.

The subject of the occurrence of fires in bunkers and in coal cargoes has been under consideration and an investigation has been made by Mr. Milton, the society's chief engineer surveyor, with a view to ascertaining the practicability of taking steps to lessen their frequency. The conclusions arrived at on this important subject have been embodied in a printed report, and the committee will have much pleasure in supplying copies of this report to ship-owners and others interested in the matter, upon application being made to the secretary.

#### NEW STEAMER FOR BLUE FUNNEL LINE

The new steamer building for the Blue Funnel Line, of which Messrs. Dodwell & Company, Ltd., are agents on the Pacific Coast, is to be called the "Ixion," and is a sister ship of the S. S. "Taithybius," which latter steamer will arrive at Tacoma from Liverpool, via Japan and Chinese ports, on November 23rd. The principal dimensions of the "Ixion" are:

Five hundred sixteen feet over all, 60 feet beam, 10,224 gross tonnage, 6,525 net tons, with a cargo capacity of 18,000 tons of 40 c. f.

The steamer can accommodate six saloon passengers and 612 Asiatic steerage. The steerage is fitted with portable bunks that can be taken down so that the space is used for cargo when not required for use of passengers.

The "Ixion" will probably take the place of the steamer "Keemun" when ready, and the "Keemun" will join her sister ships, the "Oanfa" and "Ning Chow," on the Liverpool-Australian service when replaced by the "Ixion."

#### VESSELS OF SOUTHERN PACIFIC COMPANY CONVERTED INTO OIL BURNERS

The Southern Pacific Company, Atlantic Steamship Lines, has recently contracted with the Newport News Shipbuilding and Dry Dock Company, Newport News, Va., to convert 17 vessels of its fleet from coal to fuel oil burners. The system used is mechanical atomization, and the secretary to the manager of the Southern Pacific Company writes us that it is expected that this change will result in a material saving in fuel. It will also result in reducing the fireroom force from 50 to 60 per cent. The work in connection with converting one of the vessels has been completed and the results obtained from this vessel are entirely satisfactory.

#### U. S. COLLIER JUPITER

The U. S. collier "Jupiter," now nearing completion at the navy yard, Mare Island, California, is the largest collier ever built at a government yard. The vessel is of twin screw, single deck type, with poop deck and short fore-castle, and fitted for carrying and handling coal and fuel oil. Quarters are arranged in the after deck house, on poop deck, and on berth and lower deck for officers and crew. Standee pipe berths are being provided for the crew in place of the usual hammock swings.

Principal dimensions of the vessel are as follows:

542 feet long over all.

520 feet, length between perpendiculars.

65 feet molded beam.

39 feet 6 inches molded depth.

Displacement 19,360 tons.

Loaded draft 27 feet 6 inches.

Speed 14 knots.

Coal carrying capacity, including bunkers, 12,500 tons, and in addition a fuel oil capacity of 375,000 gallons.

The vessel is built of steel throughout, the scantlings being in accordance with the rules of the American Bureau of Shipping for A-1 classification, and is equipped to pass the U. S. Steamboat Inspection laws for first-class merchant vessels. The vessel is fitted with a double bottom, extending from the after end of engine room to the

forward end of the coal cargo hold.

The cargo holds are constructed on the self-trimming system, having winged tanks in the upper top sides. These tanks, together with the bottom tanks, may be used for carrying water ballast to the amount of 3,800 tons, and, in addition to this, peak trimming tanks have a capacity of 900 tons.

Nine watertight bulkheads and five oiltight bulkheads extend from the keel to the upper deck. The oil holds are sub-divided by a center line oiltight bulkhead.

Steel hatch covers are fitted to all upper deck hatches. These hatch covers are opened and closed by means of steam winches.

Cargo or bunker coal is loaded or unloaded by means of special coaling gear, having a capacity of 100 tons per hatch per hour. This from 12 hatches will give a capacity of 1,200 tons per hour. The coaling gear consists of eight steel coaling towers erected on the upper deck and poop deck, between the cargo hatches. Four steel booms are carried on 6 of the towers and 2 steel booms are carried on the other towers. Each pair of booms, when in position, support a transverse wire span over the center of each hatch on which the coaling trolley operates. One hoisting winch and one traversing winch is furnished for each hatch. Clam shell buckets take the coal from the vessel's hold by steam winch hoisting wire spans. The bucket is then run out to end of boom by the traversing winch and discharges, running to center line and lowered into holds to repeat the operation. The operation may be reversed if collier is taking coal from dock or from another vessel. Coal may be transferred from the after cargo hold to the collier's bunkers by means of a fore and aft trolley arrangement operated similar to above.

Fuel oil cargo is handled by means of two duplex steam oil pumps located on a watertight flat forward of oil hold. A system of piping permits the vessel to take oil from a barge alongside and discharge into hold or deliver cargo oil to another vessel, at the rate of 400 tons per hour. The vessel is equipped with the customary steam pumps and other auxiliaries necessary for the handling of anchors, boats, water ballast, fresh and salt water systems, and fire extinguishing system.

The propelling machinery consists of a six stage Curtis turbine connected to a generator. The generator delivers its output to two electric motors directly connected, one on each propeller shaft. The speed of the generating unit at 14 knots is about 2,000 revolutions per minute, while that of the motors is 100 to 110 revolutions per minute. The estimated horsepower delivered at 14 knots is 7,200. The water cooled resistance devices are placed in circuit when starting, stopping and reversing. Automatic interlocking devices prevent wrong connections being made, it being impossible to close the go-ahead and reversing switches at the same time. The generating unit and motors are self lubricating and are ventilated by means of ducts connected to the fireroom blowers. Provision is made for operating propelling machinery from the pilot house or bridge.

Steam is furnished by three double ended, return tube, cylindrical marine boilers, 16 feet 3 inches in diameter, and 22 feet 2 inches long, each boiler having 8 furnaces. The boilers have been constructed complete at Mare Island and were installed immediately after the vessel was launched. The fireroom is arranged for operation under forced draft.

The Tehuantepec National Railway Company, over the signature of W. B. Ryan, the vice-president and general manager, announces that C. B. Willcox is appointed general freight and passenger agent, with offices at Rincon Antonio, Oaxaca, Mexico, vice H. E. Moore, resigned. Appointment effective November 1, 1912.



## LIFEBOATS ON OCEAN-GOING SHIPS AND THEIR MANIPULATION

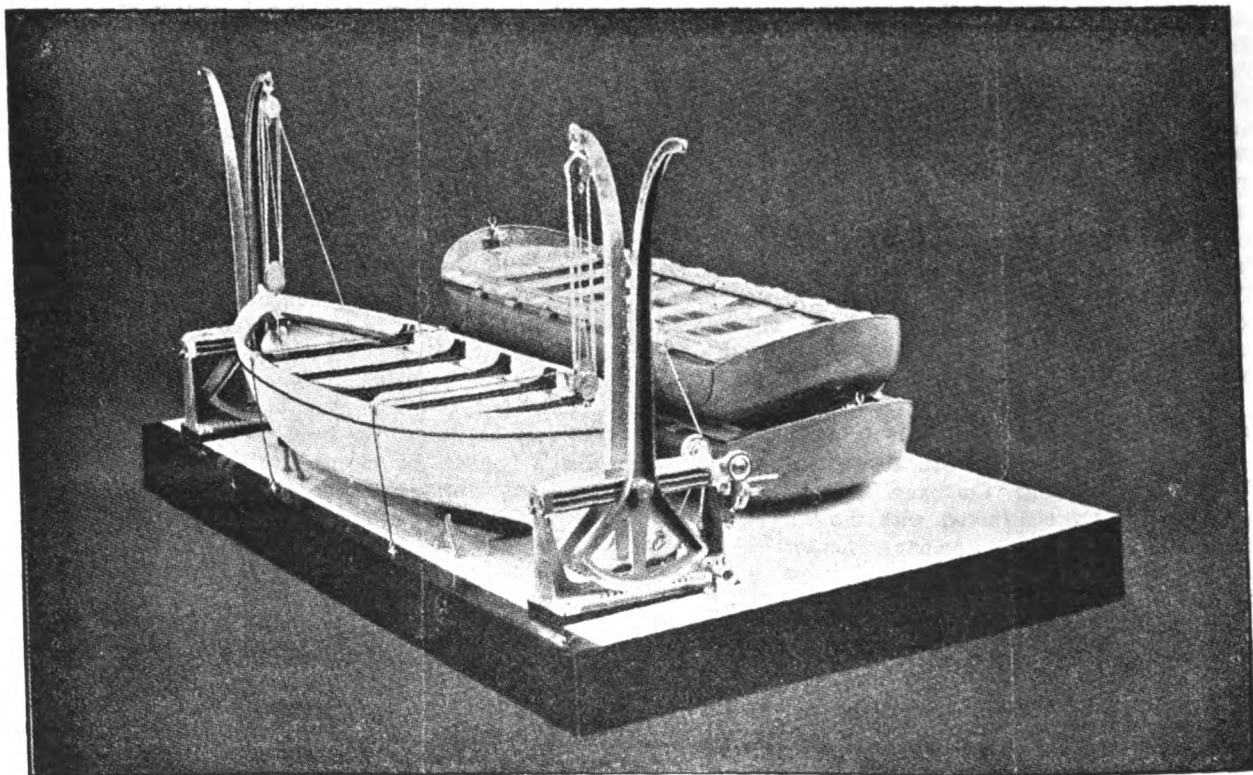
THE following is an abstract of a paper by Axel Welin, compiled for the annual meeting of the British Association, held at Dundee, 1912:

As a result of the Titanic disaster the United States government stipulated that every ocean-going passenger steamer must provide sufficient boat accommodation for every soul on board.

While this may seem, and probably is, a very reasonable requirement, the full force of it is not realized until it becomes necessary to provide the space and the means for handling the boats. It should be borne in mind that the mere fact of carrying a full complement of lifeboats

on self-releasing mechanism, arranged to float off should the ship go down, does not appear to be of much use. He does not believe that you can find a crowd of people, facing death under circumstances of the most trying nature, sufficiently calm and self-possessed to simply sit down and wait till the water lifts the raft from its position. With the vortex and suction of the last plunge of a sinking vessel the reliability of automatic releasing mechanism appears to be very limited.

Considering the question theoretically as well as practically it is believed that more reliance would be put into properly constructed lifeboats placed under efficient launch-



Method of Grouping Boats for Handling With the Welin Double-Acting Davits

implies no guarantee of safety unless the boats can be readily manned and launched with a fair degree of certainty, they only constitute so much lumber uselessly carried about. With a vessel originally planned with a boat deck for twelve lifeboats there will be considerable difficulty providing for 36 lifeboats. Provided a steamer has three open decks it is safe to say that such a vessel could without detracting materially from the comforts of passengers, be so arranged as to provide sufficient boat accommodation for every soul on board.

Recent developments in the mechanical means for handling lifeboats should be of material assistance in this connection. The illustration herewith shows a method of grouping boats for handling with the Welin double-acting davits. After the outside boat is lowered it is a simple matter to swing the davit back, pick up the second boat and lower it. It is of course necessary to pull up the tackle, and to facilitate this a special lower block has been designed which will not turn over or foul, known as a non-toppling block.

The author of the paper does not agree with those who advocate an arrangement of detachable deck houses to act as rafts, on the ground that the houses could not be made water tight if they have to have doors and windows, and without these they would be of little use under ordinary circumstances. Also any kind of life raft depending

ing gear, and of this it is certain, that no matter what means are provided the men in charge will have to be better acquainted with their gear and more efficiently drilled than has generally been the case.

With the introduction of anti-rolling tanks, whereby the rolling of the ship has been greatly reduced and very nearly eliminated, the risk of the boats being crushed against the side of a vessel has likewise been reduced.

We conclude from the foregoing that with the improved methods in handling lifeboats, with sufficient lifeboats for every soul on board, with anti-rolling tanks which give greater assurance of the boats being launched without spilling out its load, it then only becomes a question of properly training the crew for efficient handling of the boats, and we will have all the protection that can reasonably be expected. But the proper training of the crew is a thing that we cannot rely upon. While the crew of a new vessel should be efficiently trained before being permitted to carry passengers is unquestioned, how many merchant vessels are? We venture to say, none, and in selecting a vessel on which to take an ocean trip one could not expect the maximum of efficiency on a vessel taking her maiden voyage.

While it is admitted that lifeboats with efficient launching devices have a great moral effect on the traveling public, it is considered that the floating deck house idea

is not so impracticable as it at first sight might appear. It would be perfectly practicable to provide a water-tight structure with water-tight doors, air ports, etc., that would be perfectly habitable in ordinary conditions. This floating deck house would free itself from the vortex caused by the ship, but whether it would do so in time to prevent crushing of the structure is a question which could be decided by model experiments. Aside from this uncertainty it is believed that the idea is not one to be cast aside as ridiculous.

#### LIGHTHOUSE DISTRICTS ON PACIFIC COAST INSPECTED

The Commissioner of Lighthouses, George R. Putnam, recently visited the Pacific Coast on a tour of inspection. The lighting of the main Alaska channel to Skagway was inspected, as well as the proposed site for a lighthouse depot for Alaska at Ketchikan. General satisfaction was found among marine men with the manner in which this channel is now lighted by the United States, the commissioner states, the flashing gas lights being effective as well as economical.

The number of lights in Alaska has been increased from 37 to 91 in the last two years. Additional lights and fog signals, however, are needed elsewhere in Alaska, as well as additional facilities for caring for the aids to navigation in the way of lighthouse tenders and supply depots, and estimates will be submitted to Congress. Mr. Putnam had opportunity to confer with the Canadian lighthouse authorities at Victoria and at Prince Rupert.

About half of the channel between Seattle and Skagway is in British Columbia waters. Prince Rupert was found to be a thriving young seaport, the terminus of the Grand Trunk Pacific Railway, which already is in operation some distance inland. It is predicted that this new transcontinental railway will be open by 1915.

The port is just south of the Alaska boundary, so the opening of this railway is likely to materially affect communication with that territory. From Portland Mr. Putnam examined the lights and other aids on the lower Columbia river, and also went out to the end of the jetty built by United States engineers at the mouth of the Columbia. This jetty extends seven miles into the Pacific, and is the most difficult and expensive engineering work of its class. The south jetty will be completed next season, and it will be necessary to mark its end either by a lighted buoy or a lighthouse.

At San Francisco Mr. Putnam conferred with the authorities of the Panama Exposition and was shown the splendid site selected and now in active preparation. This site extends for about three miles along the north water front of the city facing the Golden Gate, and is believed to excel in nobleness of situation that of any previous exposition. The lighthouse at Fort Point, a locality of great scenic as well as historic interest, is close to the western limit of the exposition grounds.

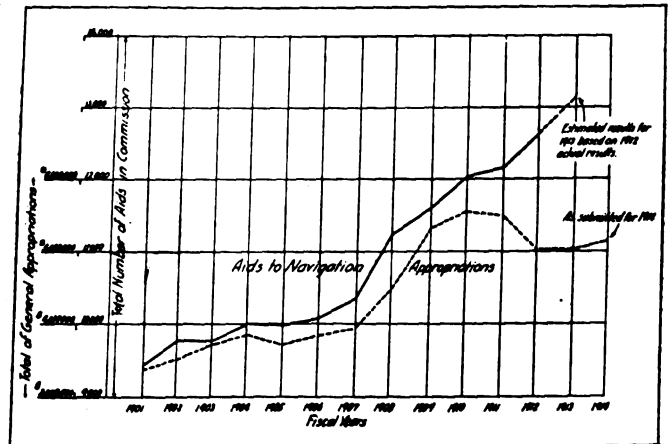
#### AIDS TO NAVIGATION

At the coming session of Congress it is desired to recommend a light and fog signal on the westerly side of San Juan Island. The location will be either at Kellett Bluff or at the lime kiln,  $4\frac{1}{2}$  miles to the southward of that point.

As there is a great deal of difference in opinions between mariners as to which is the more desirable, the Inspector of the 17th District of the Lighthouse Service requested the Pacific Marine Review to endeavor to secure expressions of opinions from those who are interested in this proposed aid to navigation, and we, therefore, trust to hear from mariners sailing out of Puget Sound and British Columbia ports.

#### NUMBER OF AIDS AND AMOUNT OF APPROPRIATIONS Lighthouse Service

The diagram shows the increase in the number of aids to navigation maintained by the Lighthouse Service compared with the annual maintenance appropriations for the Lighthouse Service for the fiscal years 1901 to 1913; the number of aids includes lighthouses, light vessels, buoys, beacons, etc., on June 30, of each fiscal year.



The commissioner of lighthouses reports that on or about May 1st, 1913, the fog signal at Cape Flattery Light Station, on Tatoosh Island, Juan de Fuca Strait, latitude 48 degrees 23' 30" North, longitude 124 degrees 44' 06" West, will be changed from a steam whistle to a first class air siren to sound a group of two blasts every minute, thus: Blast, 5 seconds; silent, 15 seconds; blast, 3 seconds; silent, 37 seconds.

#### SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS TO HOLD ANNUAL MEETING

The twentieth general meeting of the Social of Naval Architects and Marine Engineers will be held in New York November 21st and 22d, 1912. The following is a preliminary list of papers that will be read and discussed:

"Experiments on the Fulton," by Professor C. H. Peabody, Member of Council; "The Design and New Construction Division of the Bureau of Construction and Repair, Navy Department," by Naval Constructor R. H. Robinson, U. S. N. Member; "Engineering Progress in the U. S. Navy," by Captain G. W. Dyson, U. S. N.; "Marine Lighting Equipment of the Panama Canal," by Mr. James Pattison; "The Lightship," by Mr. George C. Cook; "Oil Fired Marine Boilers," by Mr. E. H. Peabody, Member; "The Preservation of the Metals Used in Marine Construction," by Lieut. Commander Frank Lyon, U. S. N.; "An Electrically Propelled Fireproof Passenger Steamer," by Mr. W. T. Donnelly and Mr. G. A. Orrok, Members; "Notes on Fuel Economy as Influenced by Ship Design," by E. H. Riggs, Member; "Different Applications of the Marine Gyro in Science," by Mr. Elmer A. Sperry, Member; "Rudder Trials of the U. S. S. Sterett," by Asst. Naval Constructors R. T. Hanson, U. S. N., and J. C. Hunsaker, U. S. N. Juniors; "Logarithmic Speed Power Diagram," by Mr. Thomas M. Gunn.

#### FUEL OIL NOTES

The Grand Trunk Pacific Railway Company, steamship department, reports a saving of approximately \$900.00 per steamer per round trip since the installation of fuel oil on steamers "Prince Rupert" and "Prince George," engaged on the northern British Columbia route. These steamers are generally satisfactory and efficient, with the exception that the general freight department complains of their limited capacity for cargo.

## THE DIESEL ENGINE

Ever since the introduction of the Diesel heavy oil engine in 1897, after about four years of experimental work, the use of this type of engine has extended rapidly and covers a wide range.

The reasons for this rapid and steady increase in the use of Diesel engines are not hard to find. Primarily they are of economy and efficiency and may be briefly summarized as follows:

Economy of fuel.

Economy in cost of attendance.

Cleanliness.

Safety.

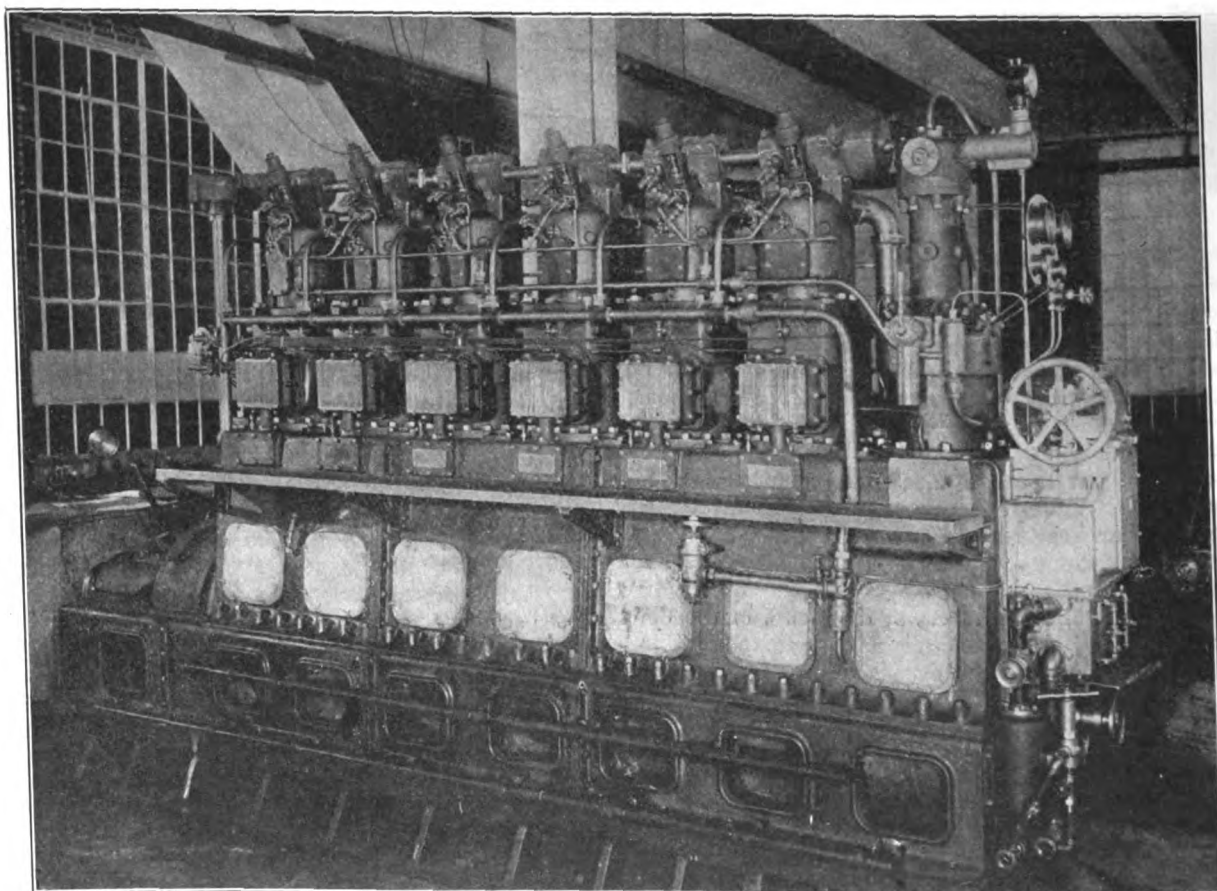
Economy in stand-by expense.

Readiness for service.

The heavy oil engine as a prime mover is comparatively new and consequently as with all new devices, there exists

until about one-eighth stroke the fuel valve closes. The gas then expands behind the piston to the end of the stroke. During the return or last stroke of the cycle the burned gases are expelled and the engine is then ready for the next cycle.

It will thus be seen that the oil engine differs from the gas engine or gasoline engine in that no explosion takes place in the cylinder. In place of an explosive mixture of gas and air ignited by an electric spark or other ignition device, causing instantaneous combustion, the oil in the form of a fine spray burns in contact with the air at a temperature above 1,000 degrees, without explosion. In this respect oil engines should be longer lived, the stresses in cylinders being less severe and less sudden. In either gas or gasoline engines, and to some extent oil engines, it is difficult to determine exactly what pressures are to be



300 Horsepower Low Speed Type—Installed in Standard Oil Barge No. 62

a certain amount of misunderstanding based on incomplete or false information.

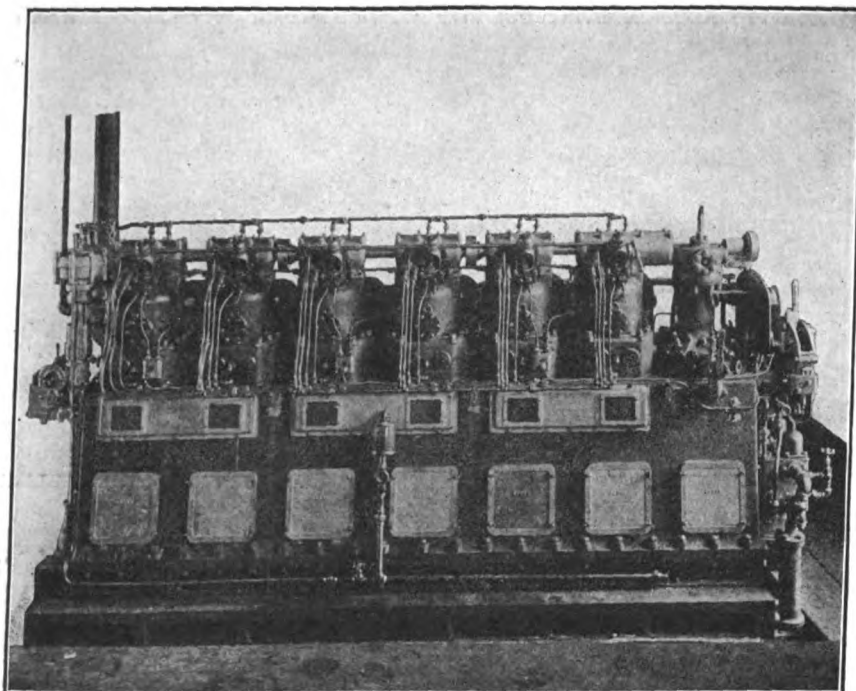
The leading manufacturers of the Diesel engine are the Maschinenfabrik Augsburg Nurnberg A. G., which type of engine is now being manufactured in this country by the New London Ship and Engine Co. of Groton, Conn. The operation of the engine is readily understood. During the first down stroke the cylinder is filled with air through an inlet valve. On the up stroke this air is compressed to about 500 lbs., during which its temperature is raised to about 1,000 degrees F. Shortly before the piston reaches the end of this stroke the fuel injection valve is opened and the oil supplied in a fine spray by a special oil pump, is injected into the cylinder, where due to the high temperature, it is ignited and burns. The expansion caused by the heat developed forces the piston down on the power stroke of the cycle, the pressure remaining fairly constant

obtained as the determining factor is the richness of the mixture of gas and air which unlike the steam engine can not be entirely controlled. It is necessary therefore to allow liberal factors of safety and the engines appear heavy and cumbersome.

From the first, engineers have predicted all kinds of limitations as to the ultimate size of the oil engines, but every year brings forth some increase in size over the previous year, so that now it would be very unwise for any engineer to state that we had reached the limit. With the great advantage of simplicity, combined with efficiency and economy, the oil engine is bound to increase in popularity, and we venture to state, will in a few years be as popular as the present gasoline engine.

Considering further the advantages enumerated above—first economy—the thermal efficiency is the highest known in engine work, being about 30 to 40 per cent, the fuel





**Idealia's Engine, 150 Horsepower, Showing Working Side**

consumption being less than one-half pound per horsepower per hour. It consumes per horsepower about one-fifth the amount of fuel required by a steam plant and about one-half that required by a producer gas plant.

While it not only uses a less amount of fuel than other forms of engine, such fuel as it uses is of the cheapest grade. Crude oil, fuel oil, gas oil, and even coal tar are the forms of fuel commonly used by these engines.

Cost of attendance is reduced to a minimum, as one man can tend an engine producing one thousand horsepower.

When work is finished for the day the engine stops and also all expense for fuel and attendance.

Repair expenses are reduced to a minimum and are almost negligible.

The engine is as economical in starting as in stopping.

The fuel, being contained in tanks and conveyed in pipes, saves the expense of handling and gives a degree of cleanliness which cannot be approached by any steam or gas plant.

Due to the high pressure and temperature under which combustion takes place there is no residue left in the cylinder.

The fuel being a heavy oil, having a high flash point there is not the danger of explosion that exists in the case of the gas or gasoline installations. As compared with a steam plant, there is not the danger of a boiler explosion, or the bursting of a steam pipe.

As there is no explosion inside the cylinder, but a combustion at constant pressure, no sudden shocks are brought on the working parts, and the engine runs smoothly and has a long life.

An ignition system with its attendant difficulties is totally lacking, ignition being effected by spraying the fuel at the proper point into the hot compressed air inside the cylinder.

While almost any oil may be used in these engines the fuel commonly employed is a by-product of gas works, oil refineries, etc., known commercially as gas oil, coal tar, fuel oil, etc.

By far the most abundant supply of fuel is of the grade commercially known as fuel oil. This is one of the products obtained from the distillation of crude oil. When

crude oil is extracted from the wells, it contains a mixture of a large variety of hydrocarbon compounds. The nature of this mixture depends largely upon the locality of the well. Generally speaking, the crude material is put through a process of fractional distillation. During the first stages of this process, volatile products are given off at comparatively low temperatures. These represent about one per cent of the original matter. Upon increasing the temperature of distillation from 140 degrees to 340 degrees Fahrenheit, gasoline, benzine, naphtha, all of which are commonly known as gasoline, are obtained and the total amount thus given off is only from 10 to 15 per cent of the original mixture. The next product above 340 degrees is kerosene or ordinary lamp oil of various qualities. The amount of kerosene is about 50 per cent of the original mixture. Finally, the heavy products such as paraffine, lubricating oils and solid residues are obtained in small quantities. Of the kerosene thus obtained only a fraction is used as

such. The remainder, and by far the greater part, is of a darker color and has no commercial use except as fuel. From this it will be seen why fuel is so plentiful and so cheap. Due to the use of automobiles and gasoline engines in small units, there has been a fast increasing demand for gasoline. For every gallon of gasoline produced there are five more gallons of fuel oil. In order to meet the increasing demand for gasoline, fresh oil fields are developed, and will continue to be developed for many years. As the oil engine is more economical than the gasoline engine, and as the specific gravity of gasoline is much less than that of fuel oil, it may be stated that so far as fuel supply is concerned we have oil enough in the world to develop about ten horsepower hours with an oil engine to every horsepower hour derived from gasoline. Whatever the production may be in the distant future, this ratio will continue to hold. Therefore, the prospective user of oil engines need not become alarmed as to fuel supply until he finds that this ratio is being exceeded. Even then there are still products from coal now commercially used in Europe in these engines, which will always be available and prove economical as long as the supply of coal lasts.

The world's present production of fuel oil obtained from crude oil is about one and one-half million gallons. Of this amount, less than one per cent is now being used in internal combustion engines. The supply of fuel oil is so plentiful that within the past few years the navies of the world have been using it under the boilers of battle-ships, destroyers and other vessels for the purpose of generating steam.

When used in this way, from three to four times as much oil is required as would be necessary in an internal combustion engine. Yet even so, this apparently wasteful use of oil has been found commercially practicable.

As regards the application of the Diesel engine for naval vessels, we can not do better than to quote the words of Lieutenant A. K. Atkins, U. S. N., in his article on Diesel engines in the Proceedings of the U. S. Naval Institute, as follows:

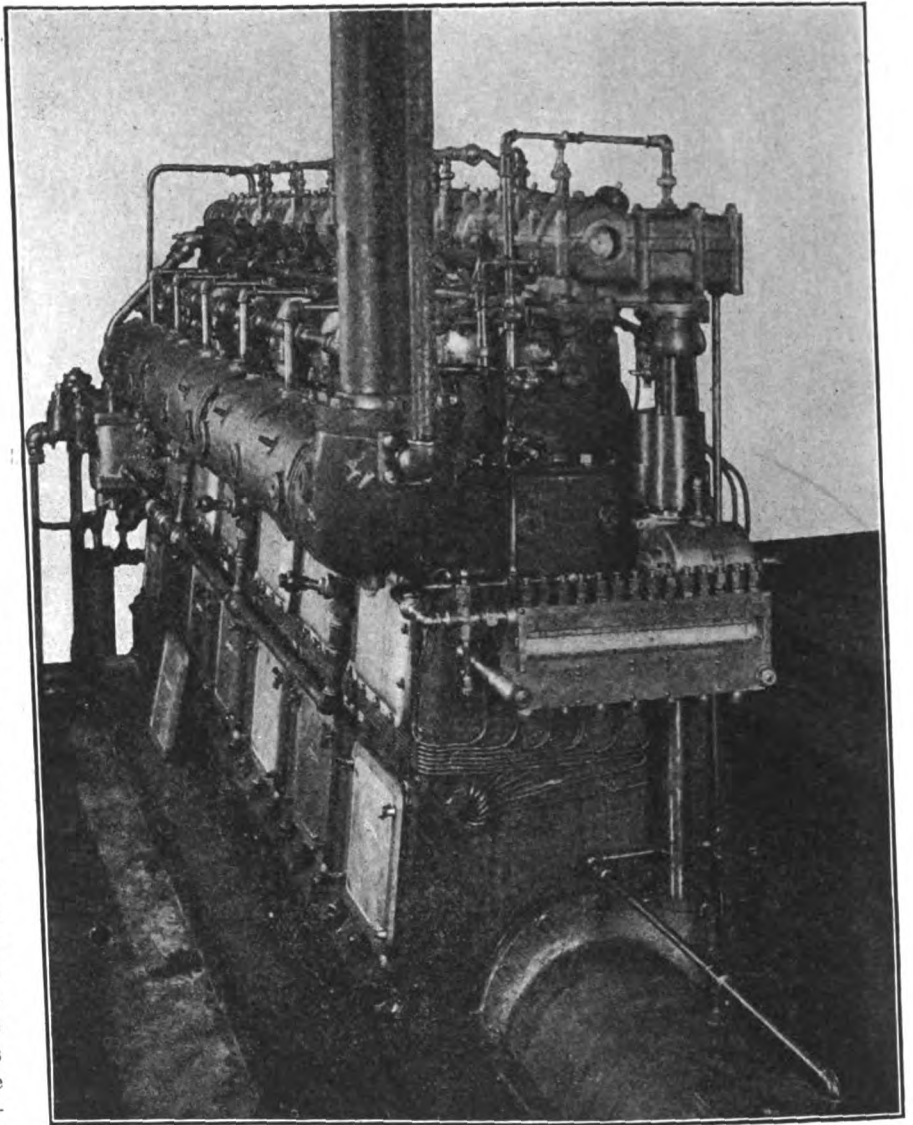
"We have then in the final estimate the following favorable points of the Diesel engine: (1) The construction of the engine is simple and strong; each cylinder is an independent unit, developing its proportional share of the



engine's power; the operation of the machine is simple and reliable. (2) Economy of fuel gives an increase of from four to six times in the radius, and the actual cost is two or three times cheaper. (3) Does away with smokepipes, boilers, steam pipes and leads, and all of the many and various accessories of a steam plant, their repairs and the personnel for their up-keep and operation. (4) The engines are always ready for operation immediately, and all stand-by losses are eliminated. (5) All parts of the power equipment can be made standard; hence repairs are simplified and time spent in repairs greatly shortened. There should not be any more trouble with the main engines of a battleship than exists at present, and it does not require much imagination to estimate the ease of up-keep if everything in the way of machinery in the propulsive department of a battleship should be wiped out except the main engines. (6) Engine room temperatures are much reduced, being little above the temperature of the outside air; in fact, it is anticipated that the engine room will be supplied with heat for the comfort of the personnel. (7) The abolition of boilers and smokepipes will greatly simplify the location of turrets and the stowage of ammunition. (8) The abolition of coaling hatches, fire room hatches, ventilators and coal bunkers will simplify construction. (9) Absence of smoke; the exhaust should be practically colorless and odorless, as the combustion in the working cylinders is perfectly complete with proper fuels. (10) The oil fuel itself brings many advantages, viz: (a) A rapid and cheap loading of

fuel; (b) entire absence of dirt and dust; (c) elimination of ashes and cinders and gear for handling them; (d) capability of storage in compartments ordinarily of little value as storage space; (e) no waste of space in storage compartments; (f) absolute safety of residual oils on ship-board; no danger from spontaneous combustion or conflagration. Tests conducted with explosive shells against tanks containing fuel oil have produced no combustion. Should a double-bottom fuel-oil compartment be pierced by an explosive shell or torpedo, the absence of the necessary heat combined with a sufficient amount of oxygen would prevent combustion. (g) Oiling at sea is a comparatively simple operation and can be conducted under unfavorable weather conditions. Coaling at sea is almost an exact science. Togo would have waited in vain in the Sea of Japan had he been opposed by a fleet of Diesel-engined vessels with their enormous radius of action and easy means of refilling their oil tanks. (h) One pound of oil in the working cylinder of a Diesel engine will do four times the work of an equal amount of coal in the furnace of a steam boiler. It seems a brutal waste of energy to burn bituminous coal if it can be made to yield, by distillation, suitable oil for heavy oil engines.

Some of the disadvantages noted have been: (1) The need of frequent cleaning of cylinders; this has not been borne out in practice and the attention given the marine steam engine in the naval service should be sufficient.



**Idealia's 150 H. P. Engine, View From Aft, Showing Exhaust Side, Thrust Block, Sight Feed Lubricators, Etc.**

(2) Cost of oil will go up as the demand increases and that the world's supply is limited; this is answered by the fact that the present price of residual oil is governed by the price of distillates, gasoline, kerosene, etc., and by the fact that the price of coal has not increased in proportion to the increased demand in normal times. Hence, such an argument against oil does not appear to be sound. Further, the ease with which oil is produced as compared with coal makes the likelihood of the supply of oil being entirely stopped by industrial troubles, such as have gripped England and other European countries and threaten this country at times, seem to be quite remote. The inability of the Navy Department to secure coal cargoes for the period of time that the recent coal troubles menaced England would seriously hamper the operations of our fleet, especially on the Pacific coast. As to the supply of oil, new fields are being discovered and the present supply of oil is believed to be as extensive as the supply of coal. Diesel engines consume oil one-quarter as fast as coal burning vessels consume coal; therefore we seem to be safe on that score, even if there were three times as many motor ships as coal-burning ships. The applicability of animal and vegetable oils to the Diesel furnishes another field from which fuel may be drawn that is not open to the steam plant. The United States is especially favored in the oil supply, as at the present time this country produces 90 per cent of the par-

affine base oils, which is the oil par excellence for use in Diesel engines. (3) Danger from explosion and spontaneous combustion; the residual oil from which the lighter hydrocarbons have been distilled in absolutely safe, safer than coal.

One disadvantage that is seldom, if ever, mentioned is the cost of the Diesel installation. The first cost is extremely high, costing more than a steam plant of equal power, including boilers, engines and all accessories. This is no doubt higher than will be the future cost, but the workmanship and materials must be of the best to stand the continuous high pressures and temperatures. Other objections have been: (a) Danger from racing in a heavy sea, but that hardly seems valid; (b) the helplessness of the plant due to loss of air; that objection also seems a little forced, especially in an installation where the personnel is of a high order. The loss of air is not any more likely than the loss of vacuum on a steam vessel, and a more helpless machine than a high-power steam vessel with no vacuum on her condensers would be hard to find.

The progress of the Diesel engine will no doubt be greatly accelerated by the recent expiration of the original Diesel patents. The strides taken in the past two or three years have been enormous, and it is most instructive and enlightening of the futility of human prediction to read articles written by engineers of note and published in the columns of leading technical journals about five years ago, in which it was asserted with the figures to prove, that the power and size of the Diesel engine could not go above certain proportions; the proportions were surpassed before the figures had become cold. The impossible was accomplished while it was still impossible.

The steam turbine is a step between the steam and the oil reciprocating engines, and perhaps in time the reciprocating oil engine will make way for the oil or gas turbine. The progress so far has been so logical, proceeding from complexity to simplicity, that further simplicity does not seem unreasonable; it may be that the province of the perfect heat cycle itself will be threatened."

The cuts illustrated are typical marine installations of the Diesel engines manufactured by the New London Ship & Engine Co., for which we are indebted to their representative, Mr. Arthur Fuller, 24 Colman Dock, Seattle, Washington.

#### CORROSION OF IRON AND STEEL PIPE

The resistance to corrosion of iron and steel pipe has been the subject of controversy for a long time, both steel and iron having adherents who believe the one would corrode less than the other under the same conditions. A recent series of experiments undertaken by William H. Walker, of the Massachusetts Institute of Technology, results of which were published in July, 1912, by the National Tube Co., indicates that there is no difference in the corrosion of iron and steel pipe taken on the average.

Naturally a poor steel will show less resistance to corrosion than a good iron, but the converse is also true. Comparisons should be made on practically equal grades of product.

Water which contains oxygen induces a rapid corrosion of pipe of either kind, while water without oxygen, other conditions being equal, will show much less corrosion, or none at all if no other corrosive elements are present.

Doctor Walker made 64 comparisons of steel and iron pipe where the history of the installation was known. The cases where iron was found more corroded than steel amounted to 26, and where steel was more corroded than iron to 18. There were 9 cases where there was no difference between the two.

In order to determine the relation between the so-called acid-corrosion test and actual corrosion in service an experiment was made in which pipes were subjected to 20

per cent sulphuric acid for four hours at room temperature. Although every care was taken to have identical conditions with all samples subjected to the test, it was found that no reliance could be placed in it. It was shown to be erroneous and misleading. The acid test not only did not agree with the service test, but the steel and iron showed no agreement when considered by themselves.

Notwithstanding the apparently definite conclusions arrived at in the preceding experiments charcoal iron seems to be preferred in all cases where it is desired to provide against corrosion, and in this connection attention is invited to a paper on the Manufacture of Charcoal Iron which was read at the last annual meeting of the American Boiler Manufacturers' Association.—(Ed. note.)

Messrs. Buxbaum & Cooley, of Seattle, have just completed the installation of searchlights and a complete outfit of wiring on the tug "Pioneer," the B. & C. special water-tights being used throughout.

These water-tights are being used quite extensively at the different shipyards. A complete list showing the sets installed by this firm during the past nineteen months is published on page 23 of this issue.

The Marine Pipe & Machine Works have a contract for installing Staples & Pfeiffer's oil-burning system in the tug "Ruth." Also have contract for installing a Mosher water-tube boiler in the U. S. revenue cutter "Arcata," together with Staples & Pfeiffer oil-burning system. General repair work has been very good and this firm has been kept very busy with contracts on hand, with good outlook for new business.

Messrs. Evans, Coleman & Evans, Ltd., of Vancouver, B. C., advise that they have chartered the S. S. "Kentra" to sail from New York with a cargo of steel rails, structural steel, etc., on or about December 24th next.

#### TRANS-PACIFIC BERTH

Conditions on the trans-Pacific berth continue active from this coast, and little or no space remains to be filled on the regular liners during the balance of this year. The enquiry for flour from Hongkong has fallen off appreciably on account of heavy surplus stocks, but Manila is buying and Japan is in the market for wheat. There is also considerable movement in Alaska salt fish and canned salmon for the Orient. A good cotton crop is reported, but so far no heavy engagements have been announced. Eastbound steamers are securing good shipments of hemp, tea, matting and general merchandise. The Waterhouse Company report large shipments of flour from Portland to Japan and Hongkong, by their four chartered steamers.

#### PROPOSED CHANGE IN SCHEDULE OF AMERICAN-HAWAIIAN LINE

Commencing with December, the "Nebraskan," "Nevadan," "Lyra" and "Isthmian" of the American-Hawaiian Steamship Company will operate from Salina Cruz to San Diego, San Francisco and Puget Sound, returning from Puget Sound to San Francisco with eastbound cargo and from San Francisco direct to Salina Cruz.

The "Alaskan," "Arizonan," "Columbian," "Virginian" and "Missourian" will operate from Salina Cruz to San Diego, San Francisco and Puget Sound, thence to the Hawaiian Islands, returning direct to Salina Cruz.

Portland freight will be trans-shipped at San Francisco and handled between San Francisco and Portland on outside vessels.

It is understood that the subject of calling at San Pedro has been discussed by the company, but it is not known whether anything definite has been decided about it.

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## CANADIAN FINANCE AND CANADIAN PROBLEMS

By H. B. Jayne

**I**T is difficult, almost impossible, to write an instructive financial note, except from London, Paris, and in a limited degree, from New York; therefore I ask the indulgence of my readers and must confine myself to general terms.

Without wishing to appear egotistical, or guilty of self-congratulation, I can consistently state that my predictions, during the past three years, in regard to Canadian finance, have been exactly realized.

After years of extravagant borrowing, a short term of immunity from the universal advance in rates of interest, Canada finds it difficult to borrow further large sums of money, except for safe and sound finance and at greatly advanced rates of interest, having like the rest of the world, risen from a 3½ to a 4½, or even a 5 per cent net basis.

No longer can its municipalities borrow with past extravagance, almost recklessness, with utter disregard to the indifferent physical condition of several of its principal cities, and contractors for such issues sell 4 to 4½ per cent debentures to British or any other investors at 101½ to 103.

No longer will either the London or the Paris market be misled by misrepresentation, in many cases wilful misrepresentation, by miscalled prominent and honorable men, into investing in exaggerated industrial mergers, grossly overcapitalized lumber companies, wherein promoters enter properties at grossly exaggerated values, and in many cases wilful misrepresentation, though cleverly concealed, as to purchase prices, a class of finance, if finance it can be called, which I have so persistently condemned during the past two years, and which has been so injurious to legitimate Canadian finance and enterprise.

Aside from extravagant borrowing by improvident municipalities, and the inevitable exaggeration of real estate boomers, additions, residential suburbs, etc., being, in most small Western cities, as in Seattle, Vancouver and elsewhere, projected beyond the line of horizon, Western Canada, with its great foundation of grain crops, is on a stable and very prosperous basis.

To quote a recent statement of Sir Thomas Shaughnessy, president of the Canadian Pacific Railway, "The farmers of the Canadian West are the richest agricultural people in the world, and there is no sign of any dissatisfaction in that part of the Dominion." The agricultural mortgage loan companies are doing a tremendous and sound business in the West and realizing 8 per cent net on their loans and existing facilities are inadequate. All Canadian

Transcontinental rail lines are much exercised by the present investigation of rates by the National Railway Commission and by the demands for reductions by manufacturers and merchants.

As in the United States, these lines are confronted by the problem of meeting maturing loans in a risen money market, ever increasing expenses and fixed charges, and it is difficult to see how rates, that is to say net revenues, can be reduced without default, far less further extension, by roads now plunged in heavy capital expenditures. It is no secret that the Grand Trunk Pacific expenditures have exceeded estimates more than 50 per cent and its financial position is causing much anxiety here and in Europe.

The same wave of prejudice, passion and unreason which compelled certain extraordinary clauses in the Panama Canal Act sweeps over Canada, for that matter throughout Europe and the world.

Manufacturers, merchants and individuals all rush to attack and assail railroads, forgetting that railroads are great national and international assets and that if those fail there must be a sequence of failure throughout.

Considerable interest is shown in regard to the probable influences of the Panama Canal both on Canadian domestic and Canadian foreign traffic, and the Dominion Government has invited the railroad companies to submit their views and expectations thereon. It is probable that steamers will go on the berth at Montreal and other Eastern Canadian ports and load, in competition with Canadian transcontinental rail lines, via Panama Canal, possibly calling at Bermuda and Kingston, Jamaica, to Canadian Pacific ports, thence seeking in grain, flour, lumber and fishery trades, transpacific, U. K., Australia, South America, etc., according to freight markets.

It must be remembered that this competition will be materially influenced by the direct trades between U. K. and Europe to North Pacific ports, and the ability of Canadian manufacturers to meet competition of European manufacturers, with due regard to the British preferential duty of 33 1-3 per cent. Freight rates as between Canadian Atlantic and Canadian Pacific ports, and Europe and North Pacific ports, both via Panama Canal, will about equalize, at least in classes of traffic likely to move by steamer between Eastern and Western Canada.

Perishable traffic, such as butter, etc., the transcontinental rail lines will hold at present rates, or by slight reductions, although a ship broker in Montreal recently told me he was figuring on a refrigerator service rate of half a cent a pound, which I don't think would arouse much enthusiasm among British or any other steamship owners. It is very doubtful if much Canadian grain will move via the Canadian Pacific Coast, except to the Orient, for even if it would be good business policy for the Canadian roads to cut the rate to the average rate from the interior of Idaho, Washington and Oregon, which would be difficult in view of the differences in distance from the Canadian grain fields to the Canadian Pacific Coast, as compared with the distance from the three named States to the United States Pacific Coast, in order to try and develop a Western grain route to Europe, via the Canadian Pacific Coast, they might establish a dangerous precedent in regard to domestic and other traffic, and thus reduce revenues which all lines are struggling to increase.

I recently had the privilege of a short conference with Premier Borden and other ministers, and find that they are fully aroused to the urgency and extreme importance of the great transportation problems which confront them and which have possibly been accentuated by rejection of reciprocity.

It seems probable that the great canal problems will be confronted in a vigorous and definite manner.

Premier Borden may not be as brilliant as his predecessor, Sir Wilfrid Laurier, or possess the same powers of eloquence, but he seems a better and more decided executive, with a desire to actually perform and dispatch important business. The same is noticeable with many of his ministers, in welcome contrast with many, who as I have often frankly stated, incumbered Sir Wilfrid's cabinet, he lacking the moral courage and decision to remove them, a possibly unpleasant duty of which the public eventually relieved him. Sir Wilfrid himself remains a man of great national and international distinction, honored and respected by all parties and is still a great power.

The situation in Eastern Europe has upset all financial markets, and while it is foolish and impossible to make any predictions, particularly from a spot so remote from the great capitals of Europe, as Ottawa, it would seem that although Turkey may lose much external territory, the exigencies of a complicated international situation will allow her to retain Constantinople. H. B. JAYNE.

Ottawa, Nov. 4, 1912.

#### THE PANAMA CANAL AND THE PACIFIC COAST AS A WHEAT OUTLET

The shipment of the western Canadian wheat crop has become a more acute problem every year. This is because the size and facilities of the eastern outlets could not possibly keep abreast with the increased average under-cultivation and the larger yield from season to season. The time has arrived when another exit for Canadian wheat is required, and most opportunely the Panama Canal will afford it. The shipment eastward of the entire western crop is a laborious enterprise and economically wasteful. The canal should enable a large share of the prairie products to go to the Pacific Coast. The Hudson Bay railway may or may not act as a further relief; this remains to be proved, as there is some doubt as to the navigation facilities of Hudson Bay; for several months of the year the waters are not navigable. But there is no doubt as to the navigation facilities of Vancouver, Victoria, Prince Rupert and the Pacific Coast generally, the waters there being navigable throughout the year.

In trying to arrive at the probable wheat crop in 1920 recourse must be had to the production and increase of the past ten years. The increase in wheat area in Manitoba is naturally not as great as in the other provinces, it having been the first to enjoy any considerable agricultural settlement in the West. The increase in Manitoba wheat area in ten years was 968,000 acres, or 48 per cent; in Saskatchewan, 4,235,000 acres, or 903 per cent; in Alberta, 1,582,000 acres, or 4,647 per cent, and in the total wheat area of the western provinces 6,784,000 acres, or 269 per cent. In making comparison between the yields of 1900 and any other year, it must be remembered that the census records of 1900 were exceptionally low, owing to drought. It will be fairer to calculate the increase in wheat production since 1901. The gain in Manitoba since that date has been 10,000,000 bushels, or 20 per cent; in Saskatchewan, 86,000,000, or 781 per cent; in Alberta, 35,286,000 bushels, or 4,117 per cent, and in the total western production, 117,000,000 bushels, or 185 per cent. These are remarkable increases, and if the increase in the western wheat area in the past ten years has been 269 per cent, and the gain in production 185 per cent, what will be the wheat area and production at the end of the next decade?

In estimating the probable increase there are many important factors of which cognizance must be taken. In the old portion of Manitoba there are about 47,000,000 acres of land, with 33,000,000 acres of good arable land. The area under cultivation is only 6,500,000 acres. Saskatchewan has a land area of 242,332 square miles, or 155,092,480

acres and a water area of 8,318 square miles. South of township 64, which is practically the center of Saskatchewan, the province has been divided for statistical purposes into nine crop districts, as nearly as possible uniform in size. The area of these districts is 86,826,240 acres and the crop area in them in 1911 was 8,602,455 or 9.8 per cent of their total area. The area of arable land in the nine crop districts is estimated to be not less than 57,884,160 acres. The total area under cultivation is 13,169,235 or 15.16 per cent of the area of the districts referred to.

In Alberta there are approximately 100,000,000 acres of arable land and of this area about 2,250,000 acres are under cultivation and occupied by farm buildings.

In 1914 we shall have two more transcontinental railways, which will open up much new land for settlement. The improvement in farming implements will mean the tilling of greater acreage in less time. These factors should compensate somewhat for the probability that mixed farming in the West will be engaged in more than hitherto; with consequently less attention to wheat, and for the fact that constant wheat growing makes the soil poorer. Assuming, after allowing for these factors, that the ratio of increase in the next ten years will be as great as in the past ten years, there will be in 1920 in the three western provinces wheat acreage of 34,321,000 acres and a wheat crop of 513,000,000 bushels. This allows a yield of 15 bushels per acre. The average wheat yield per acre in the West during the past four years was 19.71 bushels. Accepting that figure as the yield of 1920, the 34,321,000 acres should yield 675,466,910 bushels.

That is a crop that will require every possible outlet and every available market; the Panama Canal some years before then will have made an indelible mark upon the world's commerce. Western Canadian shipments via our Pacific Coast ports and the canal will before that time have become a permanent factor.

The difference in distances by shipments East and West is seen by the following typical figures:

	Miles.
Calgary to Fort William.....	1,260
Calgary to Vancouver.....	644
Saving by shipment westward.....	616
Moosejaw to St. John.....	2,393
Moosejaw to Vancouver.....	1,085
Saving by shipment westward.....	1,308

The distance from Edmonton to Fort William is 1,457 miles and to Vancouver 731 miles. The gateway to the Race River Country is, therefore, 716 miles nearer the Pacific Coast than to the head of the Great Lakes. The logical and economical result of this, coupled with the transportation facilities offered by the Panama Canal, is obvious, and the Pacific Coast is destined to become an important outlet for the wheat crop, the Panama Canal carrying a large percentage of this.

J. C.

#### NEW ZEALAND LINE

The New Zealand Shipping Company, which maintains a service from Eastern Canada ports, have made great progress during the financial year 1911-12, their net profit, after deducting depreciation, insurance charges, and directors' fees, and placing £30,000 to insurance fund coming out at £95,793 as against £55,350 for 1910-11. The addition of the sum of £16,036 brought forward gives a total of £111,829 and the directors are able to recommend a dividend of 16 shillings per share for the year free of income tax. After payment of the dividend £21,555 will remain to be carried forward. During the year the company acquired a controlling interest in the Federal



Steam Navigation Company paid for by the allotment of unissued shares of the New Zealand Company and have also purchased the Australian business of Houlder Bros. & Company.

## THE BUSINESS AND FINANCIAL OUTLOOK

Within a few days the presidential contest of 1912, with its possibilities of political agitation, will be a thing of the past. The campaign has been remarkable in that business has been only indirectly affected by it and the unsettlement which was so universally feared at the opening of the year did not materialize. As soon as bountiful harvests were assured the momentum toward improved trade conditions gained headway, and prosperity found indication in the expansion of bank clearings.

Within the last few weeks the financial situation has become somewhat complicated by the extraordinary developments in Europe. The outbreak of war in the Balkans became so disturbing to the great foreign markets as to cause very heavy selling of American securities by the English and the Continental bourses. This liquidation has resulted in the sale to this market of probably over \$50,000,000 worth of American stocks and bonds. These securities have since been well absorbed, although it was natural that the liquidation of such great blocks of stocks in so short a time should force a temporary decline in prices here. This decline, however, has not been in the least sensational, and considering the extent of the movement and the fact that the purchase of such a mass of securities had to be financed at a season when the money markets were so active, it can be said that the stock market has stood the test extremely well. The readiness with which support was offered the principal securities during the selling movement reflected a potential demand of no mean proportions. This was evidently based on the belief that the great crops, trade activity and the winding up of the presidential campaign were strong factors making for prosperity of the railroads and industrial corporations.

A summary of the important factors governing the present outlook includes increased monthly earnings by the railroads; weekly gains in bank clearings in many of the large cities (over last year) averaging 20 or 30 per cent; enormous purchases of equipment by the railroads as indicated by orders given out in October for nearly 350,000 cars and 575,000 tons of rails; the record-breaking eastbound shipments of grain from Chicago, and the unprecedented movement of grain to primary points; the heaviest demand upon railroad facilities witnessed in five years; and the largest business on the books of the steel-making companies seen since 1907. With the country doing such an active business it is natural for the borrowing demand to broaden and for both call and time loan rates to advance moderately. Prevailing rates for such loans are not, however, abnormally high, judged by the quotations which have obtained before at this season of the year, and there is no reason to believe that undue stringency will develop here unless the foreign markets should become very greatly disturbed causing interest rates abroad to advance in a marked degree. There is no reason, however, to look for such a development at this time.

The unexpected successes of the allied states against Turkey have developed unlooked for complications, creating a good deal of unsettlement among the foreign powers. No one can tell how this situation will work out, but unless one or more of the great powers should become involved in the conflict there is reason to believe that it will be

relatively short lived. The fact is that none of the Balkan states is in a sufficiently strong financial position to permit of a great war being carried on without aid from the foreign money markets. Great Britain, France and Germany are apparently not disposed to make heavy advances for the purpose of financing such a war at this time. While Turkey and possibly one or two of the Balkan states have made indirect overtures to bankers here, it is scarcely probable that war loans could be secured in the American market. The truth is that Turkey is laboring under a huge deficit, and the other states are certainly not in a position to offer very promising security as the basis for large foreign loans. The situation thus developed on the other side is exceedingly interesting, and it seems clear that the large expenditures which must be provided for will have a marked effect upon the foreign money markets, especially with reference to their ability to finance without inconvenience the great year-end disbursements.

About \$125,000,000 will be disbursed in November interest and dividend obligations, and with the turn of the year fully \$225,000,000 more will be paid out for the half-yearly interest and dividend requirements. With the public optimistic and looking forward to good times during 1913, it seems clear that investors will be more inclined to place their money in long term securities in preference to note issues and similar obligations which offer a fairly high interest rate but have only one or two years to run.

With the incoming of the new administration more will be heard of tariff revision and other great questions before the Congress. There is no likelihood that currency legislation will be taken up immediately, or at least until the Congress has considered the special bills which will be introduced as soon as the House reconvenes. As all signs point to an unusually good period of business from both a financial and an industrial standpoint, it is to be hoped that business men will be permitted to conduct their affairs along sane lines without uncalled for interference from national or state authorities.

There is a movement under way to continue the campaign of education among business men looking toward the adoption of an improved monetary system and it will be well if those who were active in this work last year see fit to continue their interest so that a national campaign may be conducted with the idea of interesting all business men. Such a movement is of special importance at this time when we are anticipating a year of great industrial activity. It stands to reason that such business activity will mean heavy burdens upon the banks and will emphasize the need for the adoption of a currency system of greater elasticity than that which we now have. Beyond all this, it must be remembered that within a relatively few months the Aldrich-Vreeland Emergency Currency Law will expire, which will mean that the banks of this country will be placed again in precisely the situation that they were in during the panic period of 1907, so far as the currency system is concerned. The importance of this ought to be recognized generally, and although it may be impossible to interest the Congress in the enactment of a new law this winter, the real needs of the situation should be strongly emphasized. This is in no sense a political issue, but one of urgent importance that ought to appeal with unusual force to business men everywhere.

THE FOURTH NATIONAL BANK  
November 1st, 1912. Of the City of New York.

## ANNUAL REPORT OF PACIFIC COAST CO. FOR YEAR ENDING JUNE 30th, 1912

New York, September 10, 1912.

To the Stockholders of the Pacific Coast Company:

The following report of the business of your company and operations of its subsidiary companies for the fiscal year ending June 30, 1912, is respectfully submitted:

There has been no change in the Funded Debt or Share Capital.

I present herewith report of your Vice-President and General Manager at Seattle, giving details of the operations of the subsidiary companies and of this company.

From the statistics furnished, it appears that in comparison with last year the earnings of all subsidiary companies, together with the rentals and receipts of the Pacific Coast Company for the year, are as follows:

Gross Earnings (Decrease) .....	\$301,827.70
Operating Expenses (Decrease) .....	59,358.21
Net Earnings (Decrease) .....	242,469.49

The net earnings of the Pacific Coast Steamship Company decreased \$103,002.35.

The net earnings of the Pacific Coast Railway Company increased \$22,894.78.

The net earnings of the Columbia & Puget Sound Railroad Company decreased \$56,081.90.

The net earnings of the Pacific Coast Coal Company, including lumber sales, decreased \$108,586.99.

Rentals, dividends, grain warehouses and Port San Luis wharf increased \$5,847.48.

General expenses and taxes increased \$3,540.51.

It appears from the report of the general manager that the reduction in gross earnings was principally caused by general depression in business. He also explains that the operating expenses could not be reduced in proportion to the reduction in gross earnings because of marine accidents, losses by floods and other difficulties beyond control.

Business conditions are reported as slowly improving in the country served by your company and its subsidiaries.

H. W. CANNON,

President and Chairman of the Board.

## Report of Vice-President and General Manager

Seattle, September 3, 1912.

Mr. H. W. Cannon, President and Chairman of the Board, New York City.

The following report is compiled from the books and accounts of the Pacific Coast Company and its subsidiary companies:

Gross earnings decreased as a result of the general depression in business that existed during the year. Earnest efforts were made to reduce expenses of all subsidiary companies. The Pacific Coast Coal Company, Columbia & Puget Sound Railroad Company and the Pacific Coast Railway Company effected substantial reductions.

On account of two serious accidents that occurred early in the year and other circumstances beyond control, the Pacific Coast Steamship Company was unable to reduce expenses. Since the middle of July business, generally, on this Coast shows some improvement and justifies the hope that the coming year will show an increase in both gross and net earnings.

## Pacific Coast Steamship Company

Gross earnings (increase) .....	\$ 93,428.61
Operating expenses (increase) .....	196,430.96
Net earnings (decrease) .....	103,002.35

There was expended for repairs to the fleet and charged to operating expenses, \$351,147.73, as against \$335,235.19 last year.

Ordinary repairs and renewals cost \$189,122.18, and extraordinary repairs, \$162,025.55.

The number of passengers carried was, approximately, the same as last year, but passenger revenue fell off \$76,269.50, owing to reduced rates forced by competition.

Freight carried increased 50,466 tons. Freight revenue increased \$129,647.70.

The main causes for increased expenses were:

Increased amount of freight handled.

Accidents to steamers "Spokane," "Santa Rosa" and "Ramona."

Necessity of operating more expensive steamers in place of the "Santa Rosa" and "Ramona," which were lost.

Cost of club insurance increased \$8,000.

Cost of deck equipment increased nearly \$10,000 on account of new government requirements.

Rates are firmer than at the same time last year. Present indications point to a better showing for the steamship company during the coming fiscal year.

July 7, 1911, the steamship "Santa Rosa," en route, San Francisco to San Diego, stranded near Point Arguella, California, and became a total loss. All passengers were landed safely. Three members of the crew were drowned. Book value of steamer, \$300,000. Insured for \$225,000.

September 10, 1911, the steamship "Ramona," en route Skagway to Seattle, stranded during a fog on rocks off Spanish Islands, and became a total loss. No lives lost. Book value, \$155,000. Insured for \$99,000.

Deductions were made from property account of the Pacific Coast Steamship Company during the fiscal year, as follows:

Retiring value by loss of steamship "Santa Rosa," \$300,000 (subject to collection of insurance for \$225,000.) Reduction in book value of steamship "Queen" and steamship "State of California," \$60,000. Retiring franchise account, \$80,000. Reducing value of furniture and fixtures, \$12,799.10. Additions were made to property account of the company by the purchase of barge "Electra" and extension to Moss Wharf Landing and material, amounting to \$7,915.44. Total deductions from property account, \$444,883.99.

In order to maintain the efficiency of our steamship fleet, which has been reduced by the loss of three vessels since January, 1911, a contract was let on April 2, 1912, to the New York Shipbuilding Company of Camden, New Jersey, for the building of a new and modern steamship, somewhat larger than any other vessel owned by the company. The contract calls for the delivery of the ship in May, 1913, and it is expected that it will add considerably to the efficiency and earning capacity of the steamship company.

The cost of the new ship will be partly provided for by the insurance collected on account of the loss of three vessels heretofore referred to.

## Rail Lines

## Columbia &amp; Puget Sound Railroad Company

Gross earnings (decrease) .....	\$90,260.85
Operating expenses (decrease) .....	34,178.95
Net earnings (decrease) .....	56,081.90

Most of the decrease in earnings was on freight, due to depressed business conditions.

General shipments have been increasing since July 1, and it is hoped that more favorable conditions will prevail.

A much larger reduction in operating expenses would have been made but for damage caused by an unprecedented flood in Cedar River last November, which was greatly augmented by the bursting of a large dam of the City of Seattle, Water Department, above Maple Valley.

Work on the sea wall in front of Piers "A," "B" and "C," Seattle, has been completed, but not until after the close of the fiscal year.

Work on double track between Island Number One (Seattle) and Renton has been completed, but accounts are not closed.

## Pacific Coast Railway Company

Gross earnings (increase) .....	\$ 6,895.85
Operating expenses (decrease) .....	15,998.93
Net earnings (increase) .....	22,894.78

There was charged to "operating expenses" and written off to cover depreciation of equipment and power transmission, \$10,281.63 this year, as against \$6,502.41 last year.

Increased oil shipments caused a slight increase in gross earnings, notwithstanding a heavy decrease in grain and lumber shipments.

Crops, this year, are turning out well and indications point to a better year than last.

Net earnings of grain warehouses decreased \$5,165.07 on account of a light grain crop. The decrease in grain tonnage was partly offset by increased shipments of beans.

A new grain warehouse was built at Fugler to protect the company against loss of grain business to the new competing line.

**Pacific Coast Coal Company****Coal Department**

Gross earnings (decrease) .....	\$316,731.65
Operating expenses (decrease) .....	214,197.97
Net earnings (decrease) .....	102,533.68

The total output of the mines during the year was 709,262 tons, which includes 16,116 tons from mines under development—a decrease of 28,493 tons as compared with previous year.

The amount of coal sold at all depots was as follows:

From company mines, tons .....	671,290
Other domestic coal, tons .....	12,129
Foreign coal, tons .....	68,616

Total, tons ..... 752,035  
—a decrease of 81,769 tons under last year.

The decreased output and sales was partly on account of depressed business conditions and partly on account of competition of California Fuel Oil, which has been selling very cheap during the past year. A large number of steamers have been converted to oil burners and a number of railroads are now using oil fuel on their Pacific Coast divisions.

Increased competition forced a decrease of 24.5 cents per ton in gross receipts. By strict economy in operation of mines, the average cost of output was reduced 16.6 cents per ton.

October 23, 1911, the company sold its coal business at San Francisco to the Western Fuel Company. The San Francisco depot dealt almost entirely in Australian and other foreign coals and there was not sufficient profit in the business to warrant the investment necessary to carry it on.

If business conditions improve the Coal Sales Department expects to show an increase in sales of domestic coal during the fiscal year.

There were no serious property accidents at the mines during the year.

**Lumber Department**

Lumber business shows a decrease over previous year as follows:

Gross earnings (decrease) .....	\$4,325.44
Operating expenses (increase) .....	1,727.87
Net earnings (decrease) .....	6,053.31

Sales were somewhat lighter and prices slightly lower than last year.

J. C. FORD,

Vice-President and General Manager.

**ANNUAL REPORT OF NORTHERN PACIFIC RAILWAY COMPANY**

Howard Elliott, president of the Northern Pacific Railway Company, in the annual report of this company for the fiscal year ending June 30th, 1912, states as follows:

"During the fiscal year business in the territory served by the Northern Pacific Company's lines was quiet; the lumber business, which is an important part of the tonnage handled by your company, was smaller than for several years past. That freight earnings did not show a decrease in spite of the generally dull business in many lines is due to the fact that there were 21,639 more cars of grain delivered at important terminals this year than last.

The fall in passenger earnings was very marked, \$1,935,060.47. This heavy decrease was the result of several causes. General conditions were such that people felt poor, and were much more careful about expenditures than during the past three years. The Chicago, Milwaukee & St. Paul Company on May 29, 1911, established double daily passenger train service between Chicago and Puget Sound points via St. Paul. These trains making 1,464 trips during the year, naturally took a very considerable proportion of the business that they did from the Northern Pacific, not only the long-haul through business, but much intermediate business handled heretofore exclusively by this company. The passenger business moving between Portland, Tacoma and Seattle and intermediate points over the line of your company, leased to the Union Pacific and Great Northern, is gradually being divided up more nearly into equal parts between the three companies using the property. The equalizing process results in loss to the Northern Pacific that formerly handled all of the business. There was also greater competition than ever before in the Gray's Harbor and Yakima Valley districts in the State of Washington. There is little doubt also but that the growing use of the automobile has had its effect on the volume of passenger

business. The latest figures for registration of automobiles shows that there are, not counting commercial vehicles, 827,284 automobiles in the United States, or about one for every 115 people, and in the states served by your company, one automobile for about every 90 people. This results in considerable decrease in the short travel on the railroad, and also has had the effect of reducing the volume of pleasure travel, temporarily at least, because people of moderate means cannot own automobiles and also make trips to the mountains, parks and lakes. The same causes that affected passenger earnings caused reductions and other sources of revenue.

During the year arrangements were completed with the Chicago & Northwestern Railway Company whereby the passenger train known as the 'North Coast Limited,' formerly operated between St. Paul and Minneapolis and Puget Sound cities and Portland, was run through between Chicago and Pacific Coast terminals. This arrangement will offset in part the competition of the double daily service of the Chicago, Milwaukee & St. Paul Railway and it is thought will increase the movement of business, both freight and passenger, between the territory served by the Northern Pacific and Northwestern roads. The results of the operation of the train, which was established December 17, have been very satisfactory up to the present time.

The winter was a long and severe one, entailing rather more expense than usual. In spite of that, however, there was a reduction in the cost of conducting transportation of \$845,090.73, due to the ability of the company to increase its revenue train load from 461.45 tons to 510.54 tons, with a consequent reduction in freight train mileage of 475,172 miles. The passenger train mileage was 24,891 less than for the fiscal year ending June 30, 1911, and 1,219,443 miles less than for the year ending June 30, 1910.

Your attention is called to the taxes paid, which show an increase of \$442,281.88. The total taxes amount to 5.9 per cent of the gross earnings and 14.6 per cent of the net earnings of the company.

The outlook for general business for the coming year in all of the states served by your company is extremely good. The crops of grains, grasses and fruits have never been better than they are this year, and there is a marked increase in the movement of lumber and manufactured articles."

**PUGET SOUND TRACTION, LIGHT & POWER CO.**

This company does or controls through stock ownership or lease substantially all the electric street and interurban railway and the commercial electric lighting and power business in the Puget Sound district, including the cities of Seattle, Tacoma, Bellingham and Everett, Washington. The company owns or controls hydro-electric power plants with a present development of 74,000 horsepower and an ultimate development of 175,000 horsepower; steam stations with a present capacity of 36,000 horsepower and street and interurban railways aggregating 464.6 miles of equivalent single track. Population served approximates 400,000.

Gross earnings for 1912 (partially estimated) ... \$8,369,000  
Net earnings, after deducting all charges ..... 1,616,000  
Required for dividends on \$9,785,000 preferred stock .....

587,100  
Earnings are over two and one-half times the amount required to pay 6 per cent dividends on the preferred stock. Dividends at the rate of 4 per cent are being paid on \$18,530,900 common stock.

**REDUCTION IN HONOLULU RATES**

The Pacific Mail Steamship Company advises that effective with the sailing from San Francisco of the steamship "Korea" October 12, 1912, the rates for first-class passage between San Francisco and Honolulu in inside rooms on the saloon deck on steamships "Mongolia," "Manchuria," "Korea" and Siberia" will be reduced to \$65 per berth single trip and \$110 round trip, the latter good for four months. Outside rooms on this deck will remain \$75 per berth single trip and \$135 round trip.

The return portions of round trip tickets are also good for passage by steamers of the Oceanic Steamship Company and the Matson Navigation Company.

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## MARINE INSURANCE RATES AND THE ST. LAWRENCE

## MARINE INSURANCE RATES AND THE ST. LAWRENCE

There has been considerable discussion recently regarding the insurance rates on cargoes to and from the St. Lawrence River ports, including St. John, N. B., and Halifax, and complaint as to discrimination against them and in favor of American ports of shipment for grain and other products of the Canadian Northwest, the complaint being that the rates in the Fall months of September and October are such as to practically prohibit shipments through the Canadian ports by way of the canals and the St. Lawrence. This discussion has gone so far as to result in an appeal to the Underwriters at Lloyds, London, for a reduction in the current rates, and that failing, in a threat to organize an underwriting syndicate for the sole purpose of taking care of the St. Lawrence business, to which syndicate Mr. J. D. Hazen, Minister of Marine, in a speech before the Canadian Manufacturers' Association at Ottawa, promised Government aid.

The appeal to the Underwriters did not meet with a favorable response, even with the threat thrown in, and it remains to be seen what the outcome will be. It is a well-known fact that navigation, not only of the St. Lawrence, but of the waters approaching it, is extremely dangerous in the Fall months, due to dense fogs, treacherous currents and high winds, and that the losses have far exceeded the premium income. Under these circumstances it was not considered good business to attempt any reduction in rates particularly in view of the fact that there is a movement towards a general raise, not only on annual hull business, but on cargo business.

In this connection it is rather a curious commentary on the situation to note the following from a recent issue of "Fairplay," which London publication keeps in close contact with the insurance situation, as to the attitude of underwriters generally regarding rates. We quote as follows:

"It has been well and truly said that underwriting as at present conducted is a game of chance, in which the element of brains is entirely absent. In confirmation of this statement, it is asserted that the new fleets coming forward are being insured at last year's rates. At one time the companies were loud in their complaints of the attitude of Lloyd's underwriters. The very underwriters of companies who thus complained are now in the front rank of those who write by chance, and not with brains."

Now if this be true then it would be natural to suppose that with the threats some one underwriter would reduce the rates for St. Lawrence business and the others in the effort to get business would fall in line, but the stand taken in regard to this particular business would indicate that in certain lines, at least, underwriters are governing themselves by experience, an experience which is shown by the profit and loss account. It is quite true that in many cases, but only with individuals, "underwriting as at present conducted is a game of chance," but with the companies this cannot be said as final. I have pointed out before in these columns the abortive attempts to raise rates, or at least to not reduce them, and I am still of the opinion that there are many sane underwriters who are governed by past experience and are not carried away by hysteria. To this class belong those who are not carried away by appeals for a reduction in rates in a certain line which has proven unprofitable for years.

It is unfortunate that climatic conditions are against the profitable exportation of the products of the Dominion by its own waterways, but trade must, of necessity, seek the

cheapest channels. If the dangers of the navigation of the St. Lawrence and its approaches are such as to deter underwriters from taking the risks at rates quoted for more southern routes, then that particular route must suffer. It has yet to be shown that Government assumption of risks, whether of injuries to workmen, of life or of marine risks, has proven of any advantage, either to the Government or to the beneficiaries, and it is extremely doubtful if the proposed action of the Dominion Government in creating a fund for the reduction of insurance rates on shipments by the St. Lawrence in the late or early open season will bring about the desired advantages.

It is well known that the Continental Companies are more liberal in their terms and rates than are the British companies or Lloyd's underwriters, and commenting on this subject a Montreal exchange has the following:

"As regards this attitude on the part of Lloyd's underwriters, it may be added that if their views were wholly fallacious marine insurance rates to the St. Lawrence would have been cut down long ago by continental competitors, who are nothing if not enterprising in such matters. It is a fact, however, that whereas the cost of insurance against marine risks has been reduced on almost every other route in the world, as the result of continental competition for the business, few attempts have been made to divert St. Lawrence risks from the London market, the experience of those underwriters who have endeavored to cater for such business at "cut prices" being too well known to tempt others to follow their example."

## MARINE INSURANCE RATES

At a joint meeting of Companies and Underwriters at Lloyds the following resolutions were adopted:

We, the undersigned, hereby agree that in view of the increased value in shipping and of the increased cost of repairs, we will not on and after this date (Oct. 14th) underwrite any steamers other than recognized liners unless we obtain either:

(a) An aggregate increase of 15 per cent in the values, such aggregate increase to be apportioned as may be agreed, or

(b) An aggregate increase of 10 per cent in the values (as above) and 5 per cent increase in the rate of premium;

(c) Where the value is not increased, the premium shall be increased 10 per cent.

(d) Should the value be increased by more than 15 per cent, an equivalent reduction may be made in the premium.

(e) We further agree that we will not underwrite the hulls of any steamers other than recognized liners unless policies contain a disbursement clause limiting the amount of disbursements to 15 per cent, and

(f) That we will not grant any reduction in rates except as provided in (d).

From this it will be seen that recognized liners are not included in the proposed raise in rates and are not subject to the 15 per cent disbursement clause. So far as the latter is concerned it would seem quite in order for many of the recognized liners are of such value that it is impossible to obtain full insurance up to anything like the value of the steamers, and as the owners should have some protection in case of total loss the steamers carry a policy value very much under the full value and are allowed to carry "disbursement" insurance accordingly.

It will be seen from the above that the "recognized liner" is not subject to the advance in rates, but the so-called tramp is to pay more for insurance than before. It is quite true that at the present time the tramp steamer is reaping most of the benefits of the demand for shipping. With the regular liner freight rates are fixed and the demand for tonnage does not affect them except in filling all avail-

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able space. It seems only right that the tramp, which is experiencing a season of prosperity, should divide a part of the profits with the underwriters who have for years shared in the lean. Why not now in the fat? At the same time it has been claimed, and with reason, that the liners

have always received the consideration of underwriters, to the underwriters' loss, and why now, or at any time, make the tramp pay more than his share of the burden?

It will be interesting to watch the outcome of this agreement among the London Underwriters.

### HARBOR IMPROVEMENTS AT HAWAIIAN ISLANDS

We have received from the Department of Public Works, Territory of Hawaii, the following outline of the improvements now under way and to be made in the near future in the ports of the various islands of the group:

#### Oahu

A contract has just been entered into with the Hawaiian Dredging Company for the dredging of the Alakea street slip (\$41,526.00), and dredging in front of the Fort street bulkhead wharf (\$27,420.00), both in the Harbor of Honolulu, Island of Oahu. The work contracted for will be completed about the middle of January, 1913. The depth of dredging in both slips to be 32 feet.

A contract has been awarded to the Lord-Young Engineering Company, Limited, of Honolulu, for sub-structure repair work and pavement on the Queen street bulkhead wharf, Honolulu, in the amount of \$35,803.40. The work under this contract is to be completed by October 28, 1912.

A contract has been entered into with Charles Lucas, of Honolulu, for constructing sheds on the Queen street bulkhead wharf, the amount of contract being \$46,494.00. The work under this contract is to be completed by February 3, 1913.

A contract has been let to the Lord-Young Engineering Company, of Honolulu, for laying a 10-inch fuel oil pipe line along the water front of Honolulu, from the oil tanks at Iwilei to the sewer pumping station in Kakaako. The contract price for this work is \$10,000. The work is to be completed by November 26, 1912. This pipe line is to supply oil to and from vessels.

In the near future a railroad track, for freight purposes only, will be laid to connect the wharves of the city of Honolulu to the tracks of the Honolulu Rapid Transit & Land Company.

In March of this year a plan for the development of the waterfront of Honolulu was adopted, abandoning the slip plan for the waterfront at the end of Fort street; and in place thereof a bulkhead wharf will be constructed, its sea front boundary running in a direct line from the extreme Waikiki end of Wharf No. 3 to a point at the extreme end of the Oceanic wharf. This proposed change is shown on the illustration published herewith. A contract

for this work has not as yet been awarded, but a contract for the necessary dredging work preliminary to the construction of this wharf has been let and will be completed by January 15, 1913, as above stated.

It is contemplated to build a wharf at Waikane, Island of Oahu, in the near future. The appropriation made for this wharf by the 1911 session of the Territorial Legislature was \$7,500. It is planned to construct a wharf along the same general plan as that of the Hanalei wharf, Island of Kauai, which has just been completed, which is a concrete pile substructure and wood superstructure.

#### Hawaii

On the Island of Hawaii the following improvements are being made and contemplated:

A wharf has just been completed at Mahukona, Hawaii, by A. A. Wilson in the amount of \$13,800. This is a concrete substructure, concrete floor slab and galvanized iron shed.

The reconstruction and improvement of the Napoopoo wharf has just been completed by James D. Lewis, the contract price being \$11,285. This also is a concrete substructure and wood superstructure.

In June of this year a contract was let to the Hawaiian Dredging Company for dredging in front of the wharf at Kuhio Bay, Hilo, Hawaii, the contract price being \$47,990.00. This work will be completed some time during the first of the year. Average depth of dredging to be 32 feet.

The Board has also let a contract for the construction of a wharf at Kuhio Bay, Hilo, Hawaii, to the Lord-Young Engineering Company, in the amount of \$84,000.00, for a wharf with northwest pile substructure, wood superstructure with northwest planking. This structure will be completed in February of 1913.

In connection with the construction of the wharf at Kuhio Bay a contract has also been let to the Hawaiian Dredging Company for constructing fill and laying railroad tracks complete in accordance with plans and specifications for northwest pile substructure and wood superstructure for the sum of \$64,949.00. This work will be completed the last of December of this year, unless some further extension of time be allowed for the completion of the contract, owing to delays which may occur to prevent the completion at the time specified.

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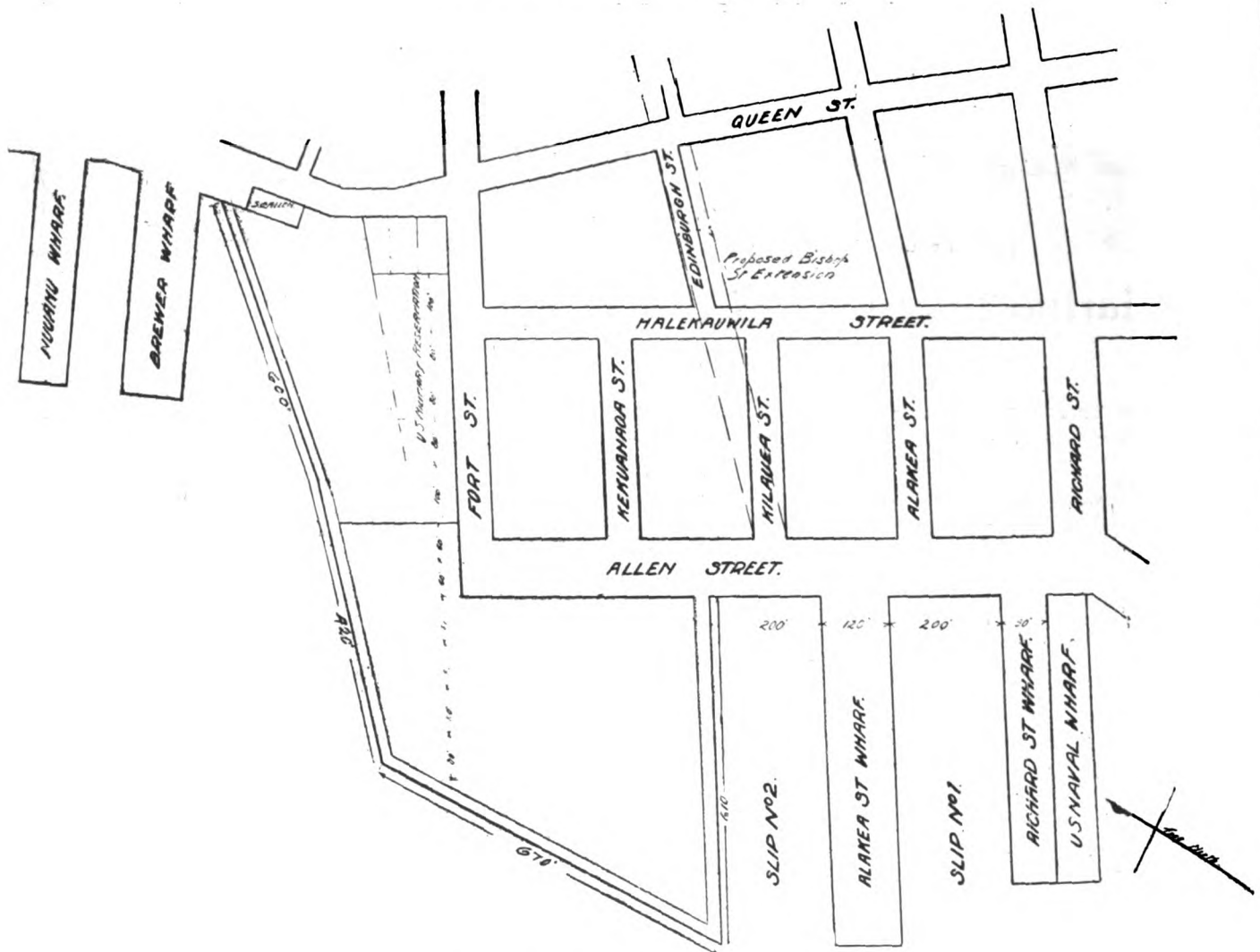
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Proposed Wharf Improvements at Honolulu

**Kauai**

On the Island of Kauai a wharf with concrete substructure and wood superstructure has just recently been completed by George W. Mahikoa, the contract price being \$9,763.00.

**Maui**

On the Island of Maui the Board will let a contract in the near future for the construction of a wharf at Kihel, Maui. This wharf will also have concrete substructure and wood superstructure. As there is an appropriation of only \$9,000 for this wharf, as much of the wharf will be built with available moneys as possible at the site of the present wharf, and the balance will be built from subsequent appropriations.

The foregoing are the most important improvements being made and contemplated by the Board at the present time; but as appropriations are made by the sessions of the Territorial Legislatures the Board intends to improve all the wharves and landings on the various islands which need extension and improvement, and new wharves will be constructed from time to time as the Board may deem advisable and necessary.

**IMPROVEMENTS PROPOSED AT PORT OF SAN DIEGO**

Harbor necessities for San Diego were exhaustively explained by the Chamber of Commerce and citizens at a public meeting at the Chamber of Commerce held October 16th, for the information of Col. Charles H. McKinstrey,

United States engineer in charge of harbor improvements in southern California.

The Chamber of Commerce report, which was presented by Rufus Choate, secretary, was replete with harbor facts and city statistics.

In opening the meeting the government engineer stated he had called it for the purpose of learning facts upon which he might make a report as to the advisability of the government making large expenditures at San Diego in harbor improvements; this report to be only a preliminary step in the routine of the departmental work.

The requests of the city are that the harbor entrance be dredged to a depth of 40 feet and 1,000 feet wide, and the dredging of the middle ground and city terminals to accommodate vessels drawing 35 feet.

**PILOTAGE AT PORT OF VICTORIA, B. C.**

The Port of Victoria, B. C., is very desirous of reducing its receipts from pilotage fees and has accordingly made recommendations for improvements benefiting ship owners calling at that port.

We suggest that this is a good example for such ports as San Francisco, where it is necessary for a ship of large tonnage to pay a considerable sum for pilot dues.

The following is the report by a committee of the Victoria, B. C., Board of Trade upon this subject, which was fully approved at the last general meeting of the Board. In this connection it might be stated that the

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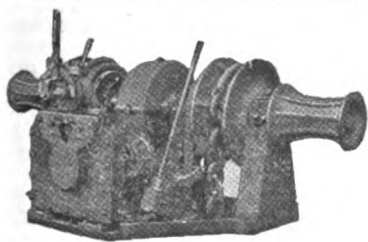
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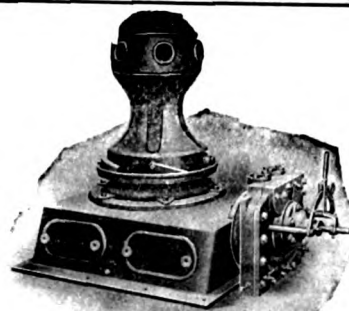
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pilotage fees at Victoria are at present lower than at any other port on the Pacific Coast, but in consequence of ease of accessibility, freedom from fog and protection from abnormal weather conditions the Victoria Board of Trade has always contended that pilotage at Victoria should be optional. This, however, is contrary to the Canadian Merchants' Shipping Act. The Board is therefore endeavoring to obtain some improvement in conditions meantime. The report follows:

5th October, 1912.

The President and Council, Victoria, British Columbia, Board of Trade.

Gentlemen:

Your pilotage Committee beg to report that they are informed by the Victoria and Esquimaux pilotage authority:

That, excepting a concession made the Alaskan excursion steamers, no reduction in pilotage charges has been made during the past two years.

That the total earnings of the pilots for the year ending 31st December, 1911, amounted to \$17,152.02.

That the total earnings of the pilots for the eight months ending 31st August, 1912, amounted to \$11,955.64.

That there are four pilots employed.

In the opinion of your committee it is an injustice to the port to collect between seventeen and eighteen thousand dollars per annum for pilotage services, and if the payment of pilotage dues is to continue to be compulsory your committee are of opinion that a change should be made in the present system of handing over to the pilots the pilotage receipts of the port, less about \$1,000 for office expenses. We therefore recommend:

1. That the pilots be paid a monthly salary.

2. That the pilotage authority acquire and provide all necessary equipment required by the pilots in the exercise of their duties.

3. That the number of pilots be reduced to three as soon as this can be conveniently done.

In the opinion of your committee by carrying out the spirit of these recommendations the efficiency of the pilotage service of the port would be in no way depreciated and the pilotage authority would be in a position to reduce the pilotage charges 30 to 40 per cent, on the basis of present revenue, and to a still greater extent if the trade of the port continues to maintain its present rate of increase.

All of which is respectfully submitted.

GEORGE CARTER,  
HENRY B. THOMSON,  
H. G. WILSON.

#### MARINE MISHAPS

"DAISY FREEMAN," str., from Astoria, Oct. 12th, shortly after leaving port sprung a serious leak and returned in tow.

"DAUNTLESS," schr., from Fort Bragg for Honolulu, was in collision on Oct. 14th with the Str. "St. Helens" and was towed to San Francisco by her. The schooner is badly damaged.

"ST. HELENS," str. See above under "Dauntless." The steamer received only slight injuries.

"GUALALA," str., from Westport for San Francisco, was in collision on Oct. 15th with the Str. "Argyll" and was capsized. She was later taken in tow by the Str. "Brooklyn" and towed to San Francisco. Crew all saved.

"ARGYLL," str. See above under "Gualala."

"J. J. LOGGIE," str., from Eureka for San Pedro, went ashore on Oct. 19th about one mile below Pt. Arguello and became a total loss.

"DEFIANCE," schr., from San Francisco Sept. 28th for

Willapa harbor, stranded on Oct. 20th just inside the bay. Floated later.

"CAMINO," str., from Portland Oct. 17th for San Francisco, lost propeller in heavy gale and was towed to San Francisco by the Str. "Watson." She has been libeled for salvage in the sum of \$50,000.

"IKALIS," Br. str., from Victoria Oct. 15th for Melbourne, experienced heavy gales, during which deck load was shifted, giving the steamer a bad list. She put into San Francisco Oct. 23d, where it was necessary to discharge part of the cargo in order to make repairs.

"EDITH," str., while docking at the sea wall in San Francisco on Oct. 25th refused to answer her helm and crashed into the sea wall for a distance of about 12 feet. Damage to the steamer about \$20,000.

"WASHINGTON," str., from Coos Bay Oct. 31st, when crossing the bar struck bottom heavily and returned to port leaking badly.

"NEWPORT," str. Before reported sunk at Balboa. Latest advices are that a very small portion of the cargo has been discharged, but at an expense exceeding the value of the part saved. All efforts to float the steamer have been unavailing, but confidence is expressed that the next effort will be successful.

#### MARINE DECISIONS DEVIATION—BILL OF LADING

In view of the conditions surrounding trade on Puget Sound and in Alaska, we print herewith in full a decision of the Circuit Court of Appeals, as extracted from the Federal Reporter, touching on the question of deviation and the liability of the ship for damage to cargo:

AUSTRIAN UNION S. S. CO. OF TRIESTE, AUSTRIA,  
et al. v. CALAFIORE et al.

(Circuit Court of Appeals, Fifth Circuit.)

Shipping (§ 125\*)—Liability for Injury to Cargo—Construction of Bill of Lading.

A provision in bills of lading giving the ship the right to call at any ports before or after proceeding to the port of destination "in any order, backwards or forwards, for the purpose of receiving and for delivering coals, cargo or passengers, or for any other purpose; and all such ports, places and sailings shall be deemed within the intended voyage"—must be construed with reference to the voyage contemplated by the ship owner and shipper at the time the bill of lading was issued, and be restricted in allowing deviation to the business and necessities of the ship pertaining to that voyage. And where the bill of lading was for carriage of a cargo of lemons from Italy to New Orleans, such provision gave the ship no right to stop at Tampa, Fla., several days to take on cargo for a succeeding voyage before proceeding to New Orleans, and such stopping rendered her liable for damages resulting to the fruit from such delay.

Appeal from the District Court of the United States for the Eastern District of Louisiana.

Suit in admiralty by Salvatore Calafiore and others against the Austrian Union Steamship Company, of Trieste, Austria, and others. Decree for libelants, and claimants appeal. Affirmed.

This proceeding was commenced by a libel in rem filed on behalf of Salvatore Calafiore against the Austrian steamship called the "Gerty." In that libel it was alleged, in substance, that in May, 1909, certain named persons shipped by the "Gerty" from Palermo, Italy, for New Orleans, certain boxes of lemons, receiving therefor bills of lading to their own order, which were thereafter indorsed to Calafiore. The bill of lading was attached. The libel alleged that the ship arrived at New Orleans about June 16, 1909, with the lemons in a badly damaged condition.

The causes of the damage are alleged as follows: That it was the duty of the master to proceed directly to New Orleans; that, instead of doing so, the master, while upon said voyage to the port of New Orleans with said steamship, wrongfully diverted it to the port of Tampa, Fla., where the ship was detained over six days in tropical heat loading phosphate, which the evidence shows, was for return cargo after full discharge at New Orleans; that the lemons were damaged thereby by hot weather, and "Said ship had no means of ventilation, except by opening the

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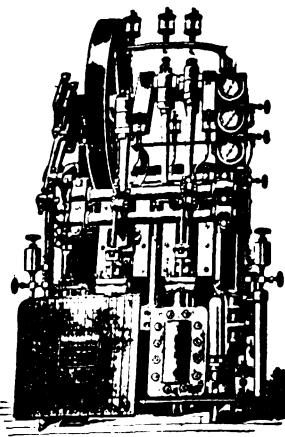
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hatches and by the usual ventilators upon such ships"; and that the lemons, in addition to the damages from heat, were damaged by "the dust from phosphate" laden at Tampa. Intervening libels were filed for other merchants, making substantially the same allegations.

Claim was duly filed by the Austrian Union Steamship Company, of Trieste, Austria (appellant), and bond given, and the ship was released on such bond. Exceptions were then filed to the libel and intervening libels on the ground that they stated no cause of action. These exceptions were overruled, and the company then filed its answers to the libel and intervening libels. These answers admitted the shipments and the voyage and the stop at Tampa; averred that the ship was properly equipped, manned, etc.; averred that the damages were greatly exaggerated, and demanded full proof; averred that during the delay at Tampa the market price of lemons rose to an extent sufficient to offset the actual damages to physical condition; and finally claimed that, if any loss or damage occurred, it was "simply due to the unavoidable circumstances and conditions of a voyage which the shippers agreed by their bills of lading should be made, in consideration to the advantages to themselves given by such contracts."

In support of this position the defendant referred to the following clause to be found in the bills of lading:

"Shipped in apparent good order and conditioned by — in and upon the Austrian steamship called the 'Gerty,' whereof — is master for the present voyage, or whoever else may go as master in the said ship, now lying in the port of Palermo, and bound for New Orleans, but with liberty, either before or after proceeding towards that port, to proceed to and stay at, any ports or places whatsoever (although in a direction contrary to, or out of, or beyond, the route to said port of discharge), once or oftener, in any order, backwards or forwards, for the purpose of receiving and for delivering coals, cargo or passengers, or for any other purpose; and all such ports, places and sailings shall be deemed within the intended voyage."

The lower court found against the ship on the ground that the clause in question was invalid as covering the visit to Tampa. The matter of damages was referred to a commissioner, who reported his findings, on which a decree in favor of libelants and interveners was rendered. From that decree an appeal by claimant and its surety was taken.

George Denegre, J. P. Blair and Victor Leovy, for appellants.

J. D. Rouse, Wm. Grant and W. B. Grant, for appellees. Before PARDEE, McCORMICK and SHELBY, Circuit Judges.

PARDEE, Circuit Judge (after stating the facts as above). "The first thing which is always settled between a shipowner and a shipper of goods is the voyage." Lord Esher, in *Margretson v. Glynn*, 1 L. R. (Q. B. Div. 1892).

The reservation in the bill of lading on which the claimant relies to relieve itself from liability for delay and detention at Tampa must be construed with reference to the voyage in contemplation of the shipowner and the shippers at the time the bill of lading was issued, and therefore be restricted in allowing deviation to the business and necessities of the ship pertaining to that voyage. See *Swift v. Furness, Withy & Co* (D. C.) 87 Fed. 345.

In all the cases cited, stress is laid upon the voyage in contemplation, and in *Scrutton on Charter Parties* (Ed. 1910) 235, note, it is said:

"All these clauses must be construed in the light of the commercial adventure undertaken by the shipowner. Thus, a clause giving leave 'to call at any ports' will only allow a shipowner to call at ports which will be passed in the ordinary course of the named voyage in their geographical order; the words 'in any order' will allow the shipowner to depart from geographic order; but, even when there are general words giving liberty to call at ports outside the geographic voyage, these will be cut down by the special description of the voyage undertaken to ports in the course of that voyage."

The voyage in this particular case, as stated in the bill of lading, was from Palermo to New Orleans. Tampa was a port near to the route and to be passed in the voyage contemplated. Under the reservation in the bill of lading, the ship probably had a right to stop at that port "for the purpose of receiving or delivering coals, cargo or passengers or for any other purpose," all in case the same was proper and necessary to that voyage. See *Amsinck v. Insurance Co.*, 129 Mass. 185, 168. The ship did stop at Tampa, not for the purposes of the voyage, but for the purpose of another voyage to be undertaken after New Orleans should be reached. This stoppage and the delay resulting was unquestionably beyond the contemplation of the shippers

at the time the bill of lading was signed. Such delay and detention undoubtedly caused the damage the lemons suffered through heat and lack of ventilation, and some of the damage to the boxes of lemons was undoubtedly caused by phosphate dust resulting from loading phosphate.

The method of ascertaining the damages in the court below was by taking the evidence with regard to a quasi arbitration, in which both the ship and the shippers were represented, and which resulted in an estimate of 75 cents loss on each box of lemons contained in the cargo.

This average loss is fairly sustained by the evidence. Libellant's witnesses establish it and claimant's witness Richards, who examined the cargo, testified as an expert that "the lemons ran between 20 and 30 per cent damage; it might have been 20 and 25." Twenty-five per cent damage of lemons worth \$3 per box would amount to 75 cents per box. The damage from phosphate dust may have been slight, but it must be conceded that where it settled on the boxes of lemons it had to be removed before sale. The contention that no allowance was made for normal damages is not sustainable under the evidence.

The decree of the District Court was correct under the facts developed on the evidence, and it is affirmed.

It is a common occurrence, we believe, for a steamer to take in cargo, say at Bellingham giving a bill of lading as from Bellingham to San Francisco, and then to proceed to Everett, Tacoma, Seattle, and perhaps other places where cargo may be discharged or loaded before she starts for her voyage to San Francisco. Under certain conditions the use of these other ports might be considered a deviation and any damage resulting to the cargo by reason of the delay in transmission might be claimable against the ship. In the case above quoted the steamer proceeded to Tampa to take on an outward cargo, a step which was not contemplated by the shipper and of which he had no knowledge and was not in connection with the voyage for which he had shipped the lemons which were damaged by the deviation and delay. It does not seem likely that in a similar case happening on the Puget Sound run the courts would hold to the same opinion. In the latter case it is well known that the steamer makes up her outward cargo at various ports at the same time she is unloading her inward cargo, and this, being proved as a custom of the trade and well known to shippers, would probably absolve the ship from the consequences of such movements. With trade to Alaska the question may be different. If goods are shipped from Seattle for St. Michaels, and the steamer, for reasons of her own, should proceed first to Nome and then back to St. Michaels, while the bill of lading might give her the privilege of using ports in any order, yet according to the decision above cited she might be held liable for any damage to the cargo arising from the delay, or the insurance might lapse by reason of the deviation from the geographical path. Attention is brought to this to emphasize the fact that too much reliance cannot be placed on the printed terms of the bill of lading or the contract of affreightment, and that where any deviation is contemplated a special clause should be incorporated in such a way that it cannot escape the attention of the shipper, in fact he should be a party to it.

#### THE SEAMAN'S BILL AS VIEWED BY CONGRESSMAN HUMPHREY

We are glad that the election just over was a means of enabling Mr. Humphrey to again represent the State of Washington in the United States House of Representatives, and especially as now, more than ever before, he is better able, as a result of much study and experience, to further develop and defend the shipping interests of the United States in general and the Pacific Coast in particular.

The following extracted from the Seattle Times in relation to the Seaman's Bill, a discussion of which appeared in our October issue, coincides with the views of the Pacific Marine Review in this matter and we are using

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every effort possible to do what we can to prevent the passage of this bill in the Senate.—Ed. Note.

"Congressman W. E. Humphrey has strongly denounced what he calls an attempt to misconstrue the so-called seamen's bill for purely political purposes. He states the Seamen's Union has been dragged into the controversy through misrepresentations and beguiled into working for the interests of foreign shipowners.

"The passage of the bill, Mr. Humphrey declares, would destroy American shipping on the Pacific. In this connection he points out the fact that one line of American ships already has been supplanted by a Japanese corporation because of unfriendly legislation.

"In a communication addressed to the Times recently Congressman Humphrey said:

"The purpose of this bill is not to free the American sailor from so-called 'involuntary servitude,' which means his right to desert, for this bill applies only to foreign trade, and there are no American sailors in this trade. This absolutely exposes the false pretenses of those who pretend to favor the bill. No one objects to an American sailor having the right to desert whenever he pleases, and such a law has been on our statute books with reference to the coastwise trade for many years. This bill is in the interest of Japan and would drive every American ship on the Pacific Ocean under the Japanese flag within less than sixty days.

"The men back of this bill are the same men who opposed the bill that I had before Congress to assist the Boston Steamship Company's vessels, which once ran from Seattle to the Orient. They succeeded in defeating that legislation and these five American vessels no longer run out of Puget Sound ports. They have taken down the American flag and their places are now filled by Japanese vessels. The men back of this so-called seamen's bill, under the pretense of helping the American sailor, are determined to drive every American vessel from the Pacific Ocean and replace the American ships with Japanese. The men at the head of this movement know that this is true. They know that they are working in the interest of the Japanese sailor and not of the American sailor. They know that if this law goes upon the statute books it will drive every foreign vessel engaged in the deep-sea trade from Seattle to Vancouver.

"If this law were to go upon the statute books, the millions of dollars that Seattle intends to spend in the construction of terminals would be practically wasted. The benefits of the Panama Canal, under the circumstances, would go principally to Vancouver. If this bill should become a law in its present form, it would absolutely ruin every city on Puget Sound as a shipping port. These facts are so apparent that no one can read the bill and remain deceived.

"I am not yet ready to favor legislation that will drive all American ships from the Pacific Ocean and replace them with Japanese vessels.

"It is true that this bill passed the House, but it did not pass until it was positively known that it could not be considered in the Senate and it was passed solely for campaign purposes. No sane man believes the bill in its present form ever will become a law. If it does, the injury that it will work to Seattle cannot be estimated and all our hopes of commercial supremacy will be destroyed."

The West Coast Whaling Company, which was organized in Aberdeen last September, is now making preparations to erect a modern whaling station at Trinidad, California, in connection with which they will operate two modern whaling steamers.

## COMMERCIAL MOVEMENTS AT PORTLAND.

(Compiled by Portland Chamber of Commerce)

### Lumber Exports From Portland (Foreign)

October		Since January 1, 1912	
Feet	Value	Feet	Value
2,592,072.....	\$ 28,289	88,011,646.....	\$ 962,955

(Domestic)

14,537,840.....	159,916	141,522,057.....	1,489,491
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### Wheat Exports From Portland (Foreign)

Bushels	Value	Bushels	Value
1,596,658.....	1,338,031	5,125,191.....	4,433,532

(Domestic)

614,800.....	501,062	3,611,589.....	3,199,411
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### Flour Exports From Portland (Foreign)

Barrels	Value	Barrels	Value
58,105.....	231,304	580,676.....	2,317,623

(Domestic)

60,575.....	242,300	333,068.....	1,411,363
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### Barley Exports From Portland (Foreign)

Bushels	Value	Bushels	Value
264,000.....	202,460	383,884.....	295,460

(Domestic)

112,179.....	74,038	112,179.....	74,038
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### Tonnage Entered at Portland

October, 1912.....	95 vessels.....	136,268 tons
October, 1911.....	84 vessels.....	110,884 tons

### Tonnage Cleared From Portland

October, 1912.....	87 vessels.....	113,820 tons
October, 1911.....	87 vessels.....	115,619 tons

## COMMERCIAL MOVEMENTS—PORT OF SAN FRANCISCO

### Receipts of Lumber—Month of October, 1912

From—	Feet
Coast.....	27,054,000
Interior.....	2,080,000
Oregon and Washington.....	52,143,000

### Shipments of Lumber—Month of October, 1912

To—	Feet
Foreign ports.....	3,211,000
Hawaiian Islands.....	650,000

### Receipts of Grain—Month of October, 1912

Interior—	
Flour, qr. sks.....	123,982
Wheat, ctls.....	37,769
Barley, ctls.....	356,012
Oats, ctls.....	67,653
Corn, ctls.....	7,571
Coast—	
Barley, ctls.....	36,740
Oats, ctls.....	13,320
Oregon and Washington—	
Flour, qr. sks.....	306,676
Wheat, ctls.....	558,931
Oats, ctls.....	58,740
Corn, ctls.....	540
Shipments From San Francisco—Month of October, 1912	
Flour, bbls.....	34,820
Corn, ctls.....	1,599
Wheat, ctls.....	465
Barley, ctls.....	445,170
Oats, ctls.....	32,120
Beans, ctls.....	3,153

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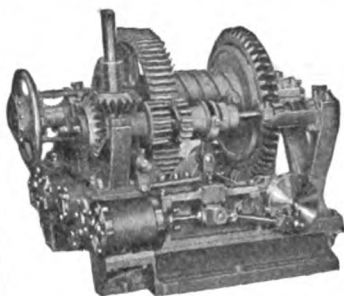
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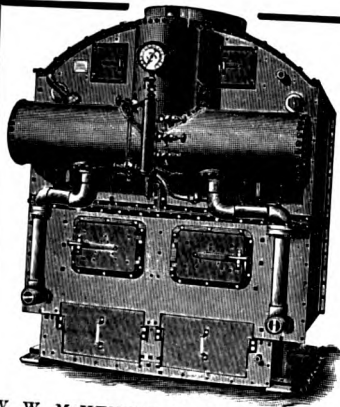


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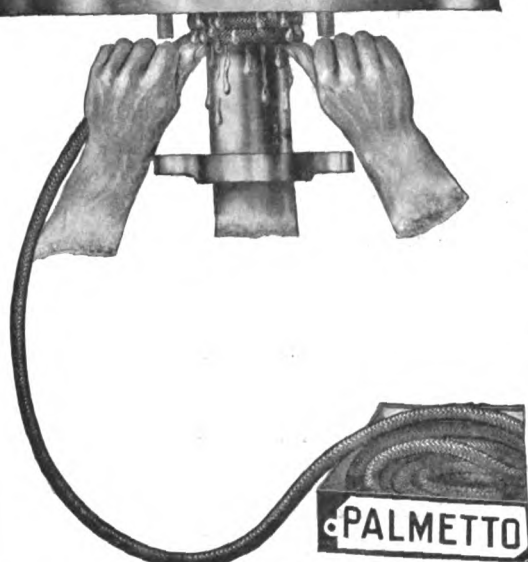
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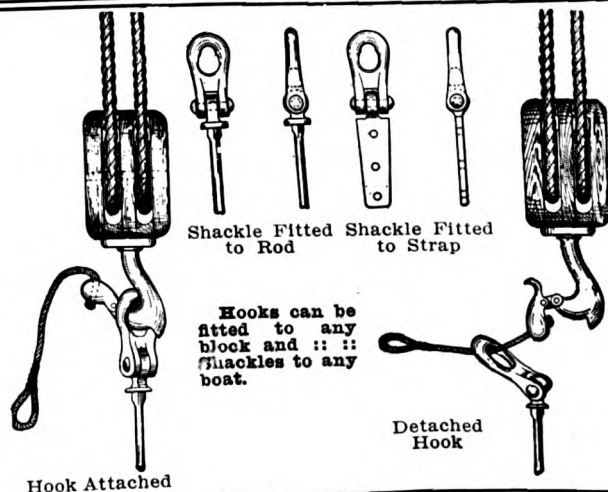
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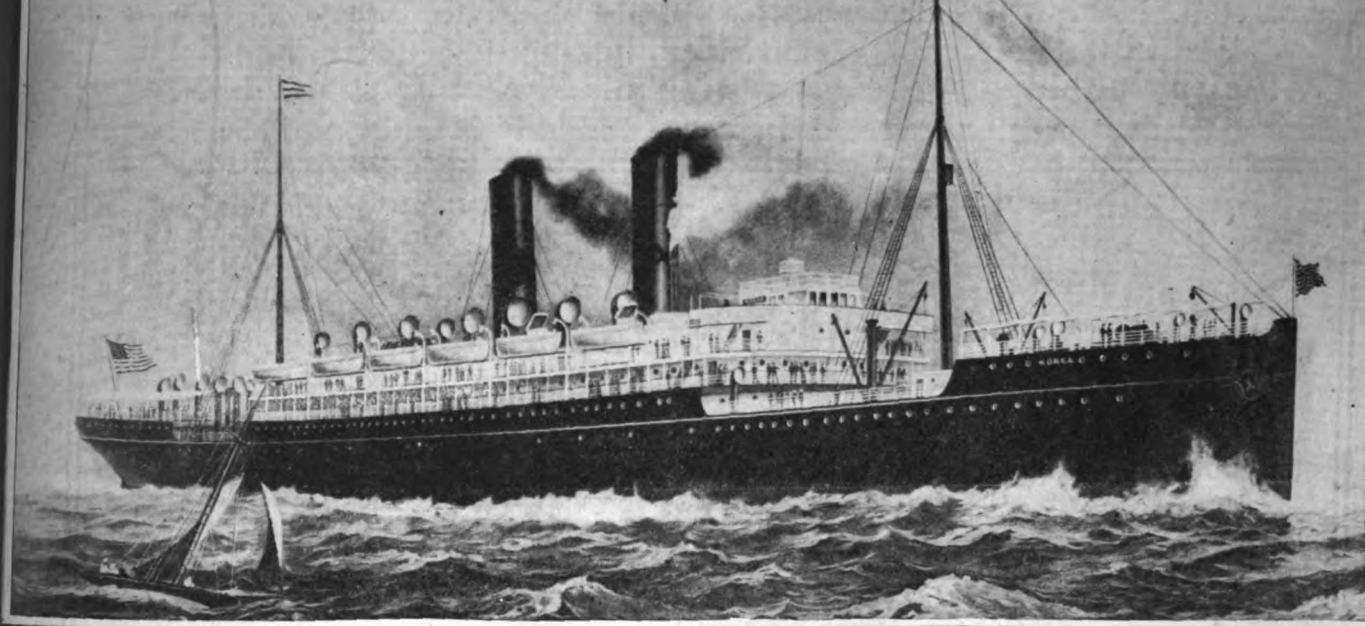
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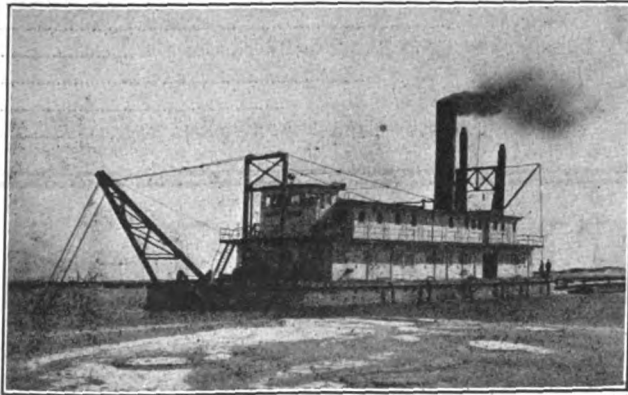
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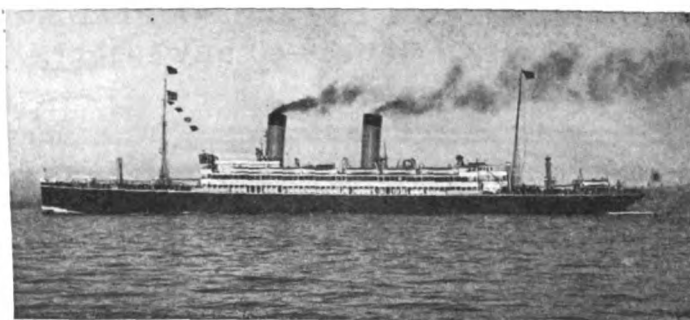
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# PACIFIC MARINE REVIEW

VOL. IX.

SEATTLE, WASH., U. S. A., DECEMBER, 1912

No. 12

## OUR MERCHANT MARINE AND THE SEAMEN'S BILL

(Continued)

**I**N the Seattle Post Intelligencer of November 25th last, under the heading of "Views of the People on Timely Subjects," and under the sub-heading of "Two Views of Chinese," appeared a letter addressed to the editor, signed by P. B. Gill, who is the 5th vice-president of the International Seamen's Union and agent for the Sailors' Union of the Pacific at Seattle. This letter is of interest to the Pacific Marine Review and also to the writer, whose editorial published in the October issue of this magazine dealt with the Seamen's Bill which is now pending before the United States Senate.

Mr. Gill's letter is reproduced herewith:

"To the Editor: Inclosed please find quotations and comments on "Two Views of Chinese." Would very much like to have you publish same in your Monday issue. Respectfully,

P. B. GILL.

"The employment of Chinese and other Asiatics on board ship has been almost universally condemned as a menace to safety at sea. We say "almost" since it would appear that the verdict in the case is not absolutely unanimous. One man has been discovered who takes a different view, a radically different view. In fact the individual in question takes the position that the Chinese seaman is a being of positively godlike characteristics. This person, signing himself "E. F.," presents his views in the Pacific Marine Review," a publication kept by the shipping concerns of Seattle, Wash., for purposes peculiarly their own. We quote "E.F." as follows:

"The Chinese crews on our Pacific liners debarred from landing on our shores are indeed giving the best of satisfaction; they have proven themselves to be truly trained sailors, belonging to a nation whose coast inhabitants are born on the water and live on the water. Male and female alike from their very childhood are expert oarsmen, with which fact anyone is amazingly impressed when visiting Shanghai, Hongkong, Hankow, Canton, in fact every Chinese port alike, large or small.

"No finer and no more fit crews ever served the stokehold of any vessel, no better, more intelligent, unassuming and faithful waiters ever attended to the wants of passengers than Chinese. These law-abiding, diligent and obedient workers, always sober and never troublesome, principally constitute the Oriental element which the seamen's bill intends to replace. As originated from and agitated for by its pseudo apostles. And why? Because this class of men have not as yet acquired sufficient knowledge of the world's commercial language, English.

"But let me assure the agitator that in case of emergency they even understand the sign language of their superior officers (in the Orient called Europeans as a distinction from the Mongolian race), and when rightly led are a marvel of tact and coolness during catastrophes. To this I can convincingly and honestly testify."

Of course, all this is new. Likewise it is important, if true. Just as we are about to offer an apology to the much maligned coolie we run across another view which makes us hesitate in the act of kneeling. Capt. Charles Severn, formerly of the steamer "Hing Chonk Kow," in an interview at Vancouver, B. C., on the 5th inst., delivers himself of the following:

"As possibly you know," said the captain, "a great deal has been written and a great deal more has been said con-

cerning the desirability and efficiency of Oriental crews in general. I think possibly, if you will look the matter up, the things that have been said have been of a most uncomplimentary nature. That is, at least, if master mariners with 'Chink' crews experience have had anything to do with the saying. Not only is the typical Chinese seaman desirous of dodging anything that has the appearance of honest toil, but he is usually of a very independent spirit, and has absolutely no scruples as to breaking any contracts he may make through his head man."

Capt. Severn cited the trouble experienced on the British steamer "Strathlow," from Newcastle, which is loading barley on the Columbia. The crew of Chinese wouldn't work, and demanded the same sort of food that was served at the captain's table. The captain continued:

"I have known of cases in the Chinese sea for the Chinese quartermaster at the wheel and the engineers to desert their posts during a typhoon and make exorbitant demands on the 'old man,' which in most cases he was compelled to grant in order to save his ship. There is absolutely no redress in the matter for a vessel plying under the Chinese flag, for mandarins ashore regard the matter as a huge joke."

These two views are obviously irreconcilable. The only explanation we can offer is that the views of "E. F." are those of a journalist in the service of the shipowners, while the views of Capt. Severn are those of a seaman who knows what he is talking about. In the light of this explanation it may be just as well for the American seaman and the American public to stand pat upon the proposition that the Asiatic is not only unreliable but positively dangerous at sea. For further information see the records of accidents to Chinese-manned ships."

Mr. Gill states that "the employment of Chinese and other Asiatics on board ship has been universally condemned as a menace to safety at sea." I wish to ask by whom have they been universally condemned? Perhaps by the union Mr. Gill represents, as a salaried employee, but certainly not by steamship management ashore nor by those in charge of vessels engaged in the Pacific Ocean trade. As an example, I quote some of our largest and best equipped trans-Pacific liners, both under American and British flags, owned by the principal Pacific and foreign steamship owners, and the many British and German lines trading in the Far East and to and from the Far East through the Suez Canal; the Canadian Pacific Steamship Company, the Great Northern, the Blue Funnel Line, the Weir Line (trans-Pacific service), of which Messrs. Frank Waterhouse & Company are the managing agents, the Robert Dollar Company, etc. As far as the Asiatic is concerned, not even the U. S. Army Transport Service has condemned him, for it is well known that this service to a large extent employs Philipinos, not on account of cheaper labor, but unquestionably for disciplinary reasons, as better results are obtained in general, as I mentioned in my article under the heading of "Our Merchant Marine and the Seamen's Bill," but which facts Mr. Gill has seen fit to evade.

The strange manner in which the agent of the Sailors' Union pleads ignorance of "this person signing himself E. F." is somewhat surprising. Associated, as the writer has been for the past year and more, as the editor of the Pacific



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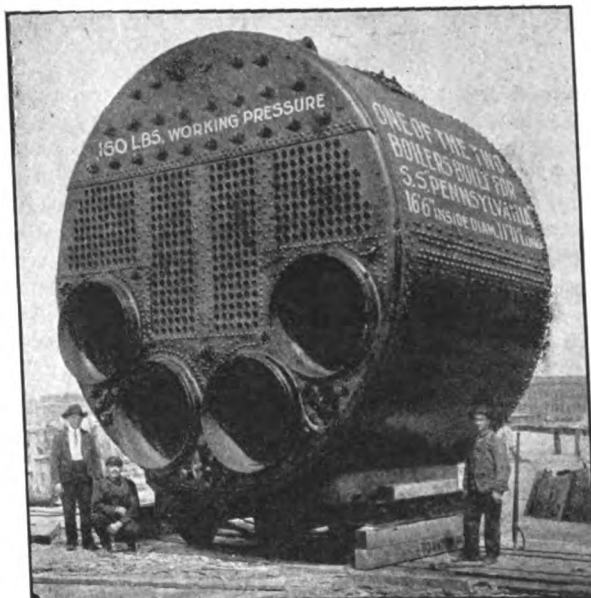
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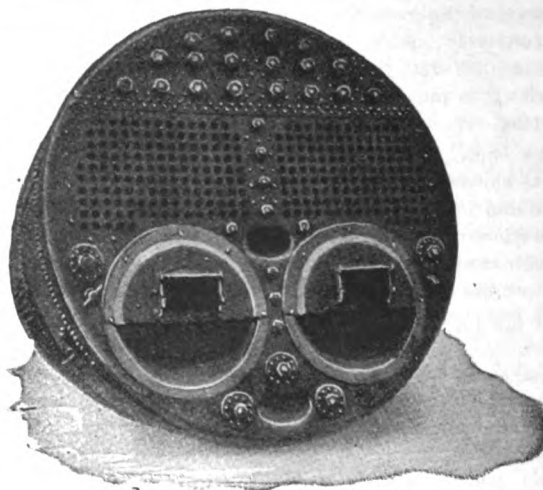
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Marine Review, never omitting nor hesitating to initial either an editorial or any other article personally written, he is fully assured that Mr. Gill remembers and knows him only too well as formerly the superintendent of the Pacific Coast Steamship Company at Seattle. To refresh the gentleman's memory, I refer to a meeting with steamship officials and the representatives of Sailors' Firemen, Cooks' and Stewards' Unions for the purpose of exchanging opinions in the framing of a renewal of existing agreements with these respective unions. Mr. Gill at the time proposed a new insertion to be made that whenever a holiday fell on a Sunday, the shipowners were requested to agree to make the following day, Monday, the substituted holiday. Of course, it was expected that the shipowner should pay on this newly created holiday the necessary overtime. Christmas of this particular year fell on a Sunday, which vividly proved how the union agent grasped every opportunity to unduly add to the burden of the operating expenses of the ship, even when a change was brought about by the universally adapted calendar. The steamer employed in the coastwise trade is placed at a decided disadvantage in this respect, compared with the off-shore vessel or the dry goods store ashore.

No shipowner is opposed to just and intelligently organized labor in any of its branches, in fact intercessory organized labor is a necessity and has proven itself to be a hopeful sign for both labor and capital, which must have either mutual existence or mutual destruction. However, every new idea that is at all capable of achievement, like everything else, has its limitations of practicability, beyond which the world at large cannot benefit. In the writer's opinion, the Sailors' Union should bear in mind the extreme difficulties the American shipowner has to contend with, due to our antiquated and inadequate navigation laws, which prevent capital from becoming interested in shipping.

The cause of human betterment moves best when it moves slowly, with every step well considered before it is taken and if our navigation laws have been stagnant for a generation or more past, it certainly has deplorably affected the shipowners and not those who have followed the sea as a profession.

Let me further assure Mr. Gill that the Pacific Marine Review is not "kept by shipping concerns of Seattle for purposes particularly their own," but on the contrary prides itself as being recognized as a just and equitable publication, exclusively devoted to shipping and its allied interests, read in many lands and on many vessels and supported by those who are interested in domestic and foreign shipping, which it discusses and deservingly protects and is, as such, proud of having its influence felt.

I can not accept Mr. Gill's compliment, when he proclaims me to be "a journalist in the service of shipowners," of whom I have never asked nor from whom I have never received support of any kind as editor of the Pacific Marine Review. Journalism is indeed a profession of its own, to which I have not pretended to aspire. However, I do honestly and earnestly claim to be a sailor, both of the marline spike, as well as of the navigating type, who as a boy of fifteen in 1875 commenced his career and today looks back upon a continuous sea service of thirty-two years, and who climbed the ladder from deck boy through all the different stages of the profession; ordinary seaman, able seaman, third, second, chief mate and master, of which period fully thirteen years of service were rendered in all types of windjammers, principally on board of the now vanished "square-rigger," as the distinction of the fore and after. A training of this kind truly inspires affection and intensifies professional enthusiasm, debarred of inequitable agitation. In days gone by, no one could aspire to steam-

ship service, even as junior officer, without a similar training, and so it should be today!

I have spoken of Chinese crews as I have found them in years of experience in the Far East, as well as in the trans-Pacific trade, and the convictions as expressed in the October issue of the Pacific Marine Review are based on some service under the flags of the three foremost maritime nations of the world, as well as under our own, in all of which I am proud to hold certificates of competency as master mariner. I have no reason to doubt Captain Severn's experiences on vessels under Chinese flag, which flag was not particularly discussed in my article previously referred to, but whatever may have been the trouble on board of the Chinese steamer "Hing Chonk Kow," or on board the British steamer "Strathlow," it does not reflect any credit upon the European officers of the vessel nor the master. Crews of the same nationality as employed on board the S. S. "Hing Chonk Kow" and S. S. "Strathlow" have so convincingly and sufficiently proven their efficiency on board of the various liners of different nations, whose efficiency is today "unfalsified" as the various representatives of steamship interests now assembled in Washington, D. C., will again ably prove.

In reference to quoting Captain Severn's knowledge of "cases where the Chinese quartermaster deserted the wheel and the engineers deserted their posts during a typhoon," etc., I had an experience where a union quartermaster on board of a large American steamer under my command, lying at anchor at the mouth of the Yangtze Kiang, awaiting a favorable tide, left his post and with a fire ax tried to kill his watch mate. Not finding his intended victim where he expected, he went into the quartermaster's room where he attacked the poor fellow of the other watch who was sound asleep in his bed, disfiguring him for life. Our American court, situated in Shanghai, China, then in charge of the Hon. Judge Wilfley, duly sentenced this wolf in sheep skin to three years in the penitentiary, although he had pleaded "intoxication," which, however, was disproved by six or seven witnesses, his own shipmates, who saw the man before the act and who caught him a few minutes after indulging in his night lunch.

Does it not appear that the defender of the Seamen's Bill means to deal in exaggeration, parading a few examples, with no regards to proportions or to the essential truth, nor with any consideration of arising consequences if such measures were to become law? Would not such measures drive our own few vessels under the flags of foreign nations and the merchant vessels of friendly nations calling at our ports to ports across the boundary line, thus jeopardizing the finest natural harbors and the increasing over-sea commerce of the Pacific Northwest? Indeed the framer, the defender and supporter of H. B. 23673 can in face of such facts but expect the United States Senate to defeat this bill outright.

Is it necessary to repeat what has been proven before the Committee of Merchant Marine and Fisheries during the discussion of the Seamen's Bill, that 95% of our so-called American sailors are foreigners absolutely and only 5% American born or naturalized, who all are compelled to become union members, at least on this coast, and to live up to union rules and regulations, whether they approve of them or not.

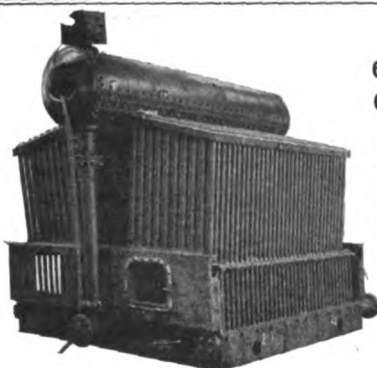
It may interest Mr. Gill to know that the writer offered his services to the New Chamber of Commerce of Seattle to join delegates from other cities of this coast in Washington, D. C., without any remuneration whatsoever in his desire to be heard before the sub-committee of the United States Senate and lend a hand as one not connected with any steamship company in the defeat of this vicious H. B. 23673, which before election unfortunate-

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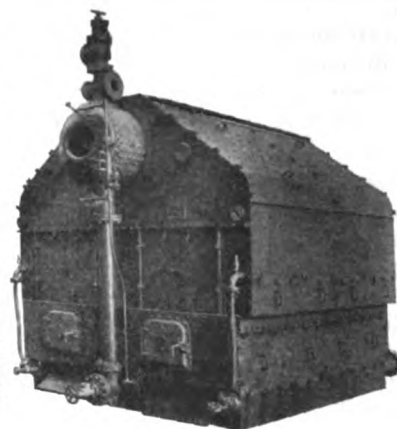
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United States Representative: **W. R. Haynie**, 30 Church Street, New York City

WHEN WRITING TO ADVERTISERS, PLEASE MENTION THE PACIFIC MARINE REVIEW

ly passed the House. I predict that it will never pass the United States Senate without a due and snug shortening of sails, but it may pass in some modified form, to the best interests of all concerned and to which naturally no intelligent, and unbiased citizen will object thus "carrying each his needments."

Common sense and decency demands that we give the just consideration to others, which we expect them to give to us and every sign of justice ~~we show~~, including justice to these unassuming, law-abiding, diligent and yes deserving Orientals, is a mark of greater respect and justice to ourselves and what applies to an individual, Mr. Gill, also applies to a nation at large. The expression "coolie" is, in the writer's opinion, unAmerican, as it denotes unskilled labor and any one going to sea in ships, immaterial of what blood, nationality or color, can not be considered unskilled, although Mr. Gill may differ even in this respect with me. Was it unskilled labor which so heroically worked under the efficient leadership of the master, engineer and officers on board the S. S. "Hazel Dollar," on March 6, 1912, in mid-Pacific? This vessel broke her rudder under most adverse and indeed severe conditions of wind and sea. Chinese sailors and fireman poorly clad worked night and day in a temperature of 32 degrees and below, up to and including March 14th, constructing and rigging jury rudders and finally succeeded after many attempts in securing the broken rudder temporarily to prevent further damage, thus saving the vessel from total destruction. I am assured that Captain Gow, the superintendent of the Robert Dollar Company at Seattle, and in command of the ship at that time, as well as Chief Engineer Welton or any other officer of the S. S. "Hazel Dollar" will gladly and convincingly testify to this statement. Is this not one recent and vivid proof of what a Chinese crew can accomplish, when rightly led by efficient superiors?

Imagination plays indeed a big and at times beautiful part in our lives, whether industrial, commercial, financial or diplomatic. Our great leaders are men of keen and large imagination, but I truly ponder whether the father of H. B. 23673 labors under the hallucination of having arisen as a Joshua sent to the United States for the rehabilitation of our handicapped and pitifully small Merchant Marine. Does the framer of such retroactive measures as this bill contains and which measures the 5th vice-president of the International Seaman's Union so loyally tries to defend with limping arguments, expect the exalted body of the United States Senate to pass the Seaman's Bill in its present form? I do not believe it is possible, as the Senate will rely upon facts rather than arguments and do its duty unbiased.

E. FRANCKE.

Written on November 28th.

#### THE SEAMEN'S BILL AS VIEWED BY A REPRESENTATIVE OF THE SAILORS' UNION

Seattle, Wash., Dec. 3, 1912.

Editor Pacific Marine Review,  
Seattle, Washington.

Dear Sir: In reply to your invitation to prepare an article with reference to the "Seamen's Bill," I beg leave to submit the following:

The principle points in the proposed law are: To abolish punishment for desertion in all safe harbors. The bill provides that a certain per cent of the deck crew shall be efficient seamen, that is, they must show a certificate that they have served at least three years on deck at sea or on the Great Lakes, and that they be 19 years of age or over, before they can sign as able seamen.

That 75 per cent of the crew must be able to understand the language of the officers.

It proposes to abolish allotment to original creditor, which means the boarding master, but permits the sea-

men, in the foreign trade, to leave an allotment to the mother or the dependent sister, etc.

It contains other features, that will make life at sea more safe and humane, and thereby must have a tendency to bring the American back to an honorable calling from which he has been driven by one-sided laws. Regarding abolishment of punishment for desertion in safe harbors, wherever crews are permitted to leave, it has a tendency to reduce the amount of desertions, because the men usually receive better treatment when they have a right to receive half of their wages earned and their liberty.

About efficient seamen, I cannot understand how anyone can object to that. It is a well-known fact that in time of danger inexperienced men are like sheep and cannot be depended on, when quick and efficient work is needed.

About the language test. It is a well-known fact that the great loss of life in the wrecks of the steamships "Rio Janiero" and others was caused by the crew not being able to understand the orders given, and were otherwise inefficient. I do not understand that any right-minded people can object to this feature.

About allotments. It has long been customary for boarding masters to charge all the allotment the law permits. This is supposed to be for board and services rendered, but in most cases the men receive but very little for the amount charged. We believe the seamen should be a free agent to secure his own employment and make his own terms with the owner of the ship, and no one should have any right to his wages before they are earned, except dependent relatives.

We hope that the bill will become a law. It provides for greater safety for the traveling public, more humane conditions for the men who go down to the sea in ships, will equalize wages in vessels of all nations, and will make life at sea so attractive that the American boy will be able to learn to be a sailor and still retain his self-respect.

Respectfully yours,

P. B. GILL.

#### PRESIDENT-ELECT WILSON AND OUR MERCHANT MARINE

The following extract from a speech made a short time ago by President-elect Wilson shows that Mr. Wilson at least realizes the existing deplorable condition of our merchant marine, especially in the foreign trade. We sincerely trust that remedial measures will be suggested within the near future and that some steps will be actually taken to benefit shipping under our flag and thus make American ownership of steamers and other craft attractive and not, as at the present time, burdensome.—Ed. Note.

"We have allowed our merchant marine to go absolutely to decay. England carries our goods. Germany carries our goods. Our ships do not carry them.

"We have now put our foreign trade in the hands of carriers who have determined the routes, and who select as their ports of entry the very ports in which they have established their own commercial supremacy, by a knowledge of foreign markets and a long acquaintance with the processes of foreign trade, of which we are absolutely ignorant.

"In the meantime we are spending millions upon millions to dig a great ditch through the isthmus. What for? There are no American ships to go through that canal, except the coastwise trading vessels. These same English and German and French ships will use that method of communication, so that the western coast of South America will be as near Europe as the eastern coast of South America is now, and South American trade, which ought to belong to us, will be more and more enveloped in the processes and the means of European commerce."



## SPECIAL REPORT ON THE PANAMA CANAL

By Director General John Barrett of Pan-American Union.

The following is a brief advance summary of the chief points in a special report of Director General Barrett of the Pan-American Union, to be shortly published on the Panama Canal and Pan-American trade. It is based, first, on a careful study, during his recent official visit to Europe, of what European governments and commercial interests are doing to get ready for the canal and to develop trade with South and Central America, and, secondly, on reliable reports he has received direct from Latin America and other countries. The Pan-American Union, being an official international organization maintained by all the American republics for the development of commerce among them, keeps in closest touch with the situation, not only in North and South America, but in Europe and even Asia. The findings, therefore, of this report, have especial authority and significance.

"Only about a year and a half remain before the Panama canal will be open to commercial traffic. Unless the manufacturing, exporting, importing and shipping interests of the United States exert themselves to the limit during the next eighteen months, they will find that they will be distanced from the start by foreign competitors in deriving practical advantages from the canal and the rapidly developing field of Latin America.

From his own study on the ground of European conditions and from reliable official reports received from both South America and Asia, Director General Barrett makes the above statement at the beginning of his report and then gives the following facts:

1. Every important port of Great Britain, France, Germany, Holland, Belgium, Scandinavia, Spain, Italy and Austria, is being improved to the highest degree of efficiency for overseas commerce.
2. Every European shipbuilding yard of recognized standing is busy to its capacity constructing ocean-going merchant vessels. Old established steamship lines are adding up to date vessels to their fleets and new companies are being formed and ordering ships.
3. European governments are instructing their diplomatic and consular agents to study and report upon every phase of trade opportunity expected to result from the canal. Their chambers of commerce and their commercial organizations are co-operating along the same lines and the business schools are educating trained men for the field. Government officials and representative men in private life are showing particular hospitality and courtesies to the visiting representative men of Latin America and all the other countries whose trade they want. Their banking and investment houses are extending their foreign facilities. Their private business companies of already large established trade and their new companies are sending agents and scouts to Latin America and all parts of the world affected by the canal to investigate trade possibilities.
4. In Japan three steamship companies are building vessels for the canal. Japanese banks are considering the opening of branches in Latin America. A score of Japanese manufacturing, exporting and importing houses have numerous agents in Central and South America. One Chinese owned steamship company is planning to operate a line from Shanghai and Hongkong to Central and South America. Australia's commercial organizations are sending men to South America to develop trade, while Australia and New Zealand are planning to establish a canal steamship line of their own. A new line of freight vessels is to run from Calcutta or Bombay to South America. Canada will run two new direct lines respectively from Vancouver and Montreal to the corresponding coasts of Latin America.
5. The west or Pacific Coast of South America, reaching 5,000 miles south from Panama, is showing great preliminary activity. Chile, Peru and Bolivia are spending \$50,000,000 in opening up their interiors with railways. Chile is building, at Valparaiso, a new artificial harbor to cost \$15,000,000. Guayaquil, the principal port of Ecuador, and one of the best harbors on the Pacific Ocean, is to be made sanitary at a large expense. Callao, the chief port of Peru, is being improved. On the east coast the activity

is even greater, for both Argentina and Uruguay will spend nearly \$30,000,000 in port improvements at Buenos Ayres and Montevideo respectively. Brazil is putting in first-class condition every port along her 3,000 miles of coast line from Rio Grande do Sul in the south to Para at the mouth of the Amazon. One hundred million dollars are being expended in constructing new railways into the interior of Brazil. Venezuela and Colombia, Central America, Mexico, Cuba and the other West Indian countries, are awakening also to the significance and possibilities of the canal and sending agents and appointing commissions to study the situation as it affects them.

The conclusion of Director General Barrett, after this review, is summed up in the statement that, while the United States Government and some of its commercial organizations and interests are doing much to get ready for the canal and to develop Pan-American trade and deserve great credit for what they are doing, they must in view of these facts redouble and extend their efforts. Otherwise they will tall the international race for the trade of the Panama canal and Latin America. They must make their slogan from now on without any let up: "Get ready for the Panama canal and go after Pan-American commerce."

## THE PANAMA CANAL BILL

After all of the remarks, many of them almost hysterical, which have been made regarding the exemption of American coastwise vessels from the payment of canal dues, it being held that such exemption is contrary to the Hay-Pauncefote treaty, it is quite refreshing, to us who hold the opposite opinion, to read the view held by the Manchester (England), Guardian. It says:

"The amendment limiting the exemption from tolls to coastwise traffic is important for this reason. By the American Navigation Laws (as by all navigation laws) coastwise traffic is reserved to American registered ships. As none but American ships can make a voyage, say, between San Francisco and New York, there can be no question of discrimination against other ships. This coastwise traffic was an American monopoly before the Hay-Pauncefote treaty, and a monopoly it remains, for no one has alleged that the treaty suspends the navigation laws. As America retains the monopoly, we fail to see how any question of discrimination can arise against a second party who does not exist so far as coastwise traffic is concerned. The real grievance against the bill in its amended form is not against its morality, but something much narrower. It may with fairness be said that the American definition of coastwise traffic is so wide that it includes practically all American shipping. An American vessel may leave San Francisco, touch at Hawaii in the Pacific, double Cape Horn, call at Porto Rico and finally discharge its cargo at New York without ever losing its coasting character. Our foreign office, when it concluded the Hay-Pauncefote treaty, should have foreseen this practical difficulty, and it could then with reason have pressed for the restriction of the American definitions of coastwise traffic to those limits which hold on European courts. There may still be a chance of so restricting the definition of coastwise traffic, and every effort should be made to use it. But if we are to hope for success we must at any rate give the United States Congress the credit for wanting to do the right thing. We must not begin to call names or stir up passion."

The Commissioner of Lighthouses reports that on or about March 1, 1913, a fog signal will be established at Point Loma Light Station, lat. 32 deg. 39 min. 55 sec. N., long. 117 deg. 14 min. 32 sec. W, to be a first-class air siren to sound a blast every twenty seconds, thus: Blast, 3 seconds; silent, 17 seconds.

## OUR MERCHANT MARINE AND THE NEED FOR ITS REHABILITATION

**C**OL. JAMES W. PORCH, president of the New Orleans Progressive Union, made the following speech before the 24th annual convention of the American Boiler Manufacturers' Association, recently held in New Orleans, and which we reproduce as showing the attitude of our Southern States towards this all important question of the rehabilitation of our American merchant marine on the high seas.—Ed. note.

"I know of no audience that could be assembled before whom one could speak on the subject of our American merchant marine and feel that it would carry more weight than with this, who are familiar with the development of the iron and steel industry of this country.

Steamships in these days are made of steel, and the merchant marine on the high seas is owned, controlled and managed absolutely by citizens of foreign countries. Foreign countries occupy this field, and make money out of our developed resources, out of our developed port that we have paid taxes on to build up to the point of efficiency that you see it in today. This foreign trade which we have made possible is used for the selfish purpose of these foreign ship owners. Out of all the 1,776 steamers that came into this port during the year 1911, carrying out of here a cargo equivalent to \$1,000,000,000 in value, there was not one transoceanic ship that bore Old Glory at the stern, there was not one ship that had one man in charge, either as owner or operator or employe in any position in authority, that was an American citizen.

In talking about this very serious matter which I purpose to put before you, I want to first call your particular attention to one thing, namely, what would Hamburg be without the German flag, what would Liverpool and London be without the British flag? And what are we as a port without the American flag?

Millions of dollars have been spent in the improvement of the Southwest Pass and the South Pass, the two mouths of the Mississippi river; millions have been spent upon the improvement of our harbors on the Atlantic Coast, the Pacific Coast and the Gulf Coast; and for the benefit of whom? The records show that in the transportation of our produce to feed the people of England and European countries we pay an annual tribute of approximately \$300,000,000 to carry it to them, and even with that great tax upon our production there is often a dearth of ships at this port to carry this wonderful product of the richest valley on earth to the markets of consumption. Ships are often absent when cargoes are plentiful. There are no American ships. European conditions absolutely dominate the richest valley in the world.

It is not long since some Chicago people went down to look at the great work now going on in Panama, the construction of that artery that will connect the great Pacific with the Atlantic, and make us next door neighbors to all the world; which will make available to us all the island possessions of the Pacific and Far East with its five millions of people. So those Chicagoans appointed a committee to go to New York and charter a ship to take their delegation to Panama. They are not seacoast people, not seafaring people, and so they never dreamed there would be any difficulty about getting a ship out of the great port of New York; but they found that there was not one available American ship to carry them down to see an American canal that is being built by the richest country on earth, and which has been made possible through the skill, the brain and the brawn of our people. The only available boat that they could find was a German ship, and they could not get it for less than \$50,000 for the trip. The chairman of the committee said that he didn't care about buying the ship, he only wanted to charter it for a short trip to Panama and back. But the Germans said, "That is our price." The chairman of the delegation replied, "I know it will be ridiculous, but I will telephone Chicago and ask them if it will be satisfactory." He rung up those aggressive people in Chicago and they said, "Yes, close with the boat people"; and they chartered the boat, the "Prince Bismarck," and so the Chicago delegation of American citizens was carried by a German ship to see the Panama canal. It gave them an object lesson of the fact that New Orleans is 665 nearer to the Panama canal than the port of New York. It set those Chicago people to thinking about what should be done for our flag, and how it would be necessary for us if we ever expect to get foreign commerce that is naturally ours, to get decently busy in

the interests of Old Glory and see if we cannot have some ships that will sail under the American flag.

There was a time when the United States had the best sailors, the best equipped ships, and did business against any of them, regardless of the fact that the manufacturing industries were still in their infancy. Then was the time that we did business in the remotest parts of the world; and now in these more progressive times when the wheels of our factories are humming, when our mines and our forges are busy, when our beef, our wheat, our corn, our cotton are waiting for export, and all of our other boundless resources, we have to depend upon foreigners to furnish the ships. Nothing is being done to send out from the port of New Orleans and our other ports fleets of ships with the American flag at the stern carrying our raw manufactured products to the point of consumption. This great country is ramified by 265,000 miles of railroads, but when the commerce which they carry reaches the seaboard it must look to foreign ships to carry it to foreign destinations. We are doing comparatively nothing in the way of a merchant marine on the high seas to develop this greatest commerce on earth.

England has 12,065 ocean-going ships; Germany has 4,300; Japan has nearly 1,800. All the other nations of the earth that are maritime in any sense have ships running into the hundreds—and we have but nine! Out of all the ships that plow the seas there are only nine that fly the American flag today in existence, outside of our navy. Is there anything in that to be proud of?

I believe that we are a wonderful nation at home; but I am certain of the fact that we are a remarkably small body and cut very, very little figure in the markets of the world.

I have said, and I say it again, that if we cannot develop on the Monroe Doctrine that stretches down to the Straits of Magellan, and develop it along the line of taking advantage of the facilities that are thus afforded by getting our own ships and covering our own countries and our own American coast, we had better abandon the Monroe doctrine as being merely in restraint of trade. If we cannot develop those countries and take care of the wonderful balance of trade that is in our favor, we had better let Germany and England do it unrestrained.

Over 12,000 tons of coffee enters this port per month on an average from Brazil alone, creating a balance of trade against us with Brazil of over \$80,000,000. Our lack of merchant marine is throttling our South American commerce and preventing the bringing up of those products of the great nations and landing them at the door of the richest valley, as I said before, that exists in all the world. We are permitting ships to carry ballast when they ought to be loaded with return cargoes, and this condition has been going on month in and month out, year in and year out; it is a shame and a disgrace that we permit it.

Through John A. Penton, of the Iron Trade Review, I have obtained data of the movement of tonnage on the Great Lakes. On the Great Lakes, by reason of the inclement weather, navigation is entirely closed for seven and a half months out of the year; yet last year, through the Ste. Sault Marie canal, the tonnage was over 32,000,000 tons, a greater tonnage than that of the ports of London and Liverpool combined. Last year, with 32,000,000 tons, which was 10,000,000 tons less than the year previous, the tonnage was moved at the rate of 60 cents per ton. That was the rate on the Great Lakes, cheaper than we can stavedore a ton of freight shipped into the port of New Orleans, and that proves that freight can be moved along the lines of least resistance on American waters in a more economic manner than it is possible to handle it by any German, English, Italian or French craft.

We have handled the coastwise business for many years with a better grade of ships, with more competent officers, with crafts better managed and better run, more cheaply per ton than they handle it abroad, all reports to the contrary notwithstanding, when the nature of the cargo is considered. The figures are beyond controversy. The figures that I use are taken from the report of the Department of Commerce and Labor of last February a year ago. At the great meeting of the Pan-American Union at Washington, delegates were assembled coming from as far away as Patagonia. There was an intelligent and representative body of some seven hundred delegates. A more intelligent body of men I have never seen under one roof in my life; and during their entire five days of deliberation those people took active part in all the discussions and in all the debates; and at not one time, so far as I saw, during

the five entire days, it was necessary to employ the services of an interpreter, because every one of them spoke the English language and spoke it perfectly. They spoke out of the faith that was in them and from strong conviction; and it was enough to bring the blush of shame to the cheek of any American who is proud of his country to hear those people say that for years and years they had begged for our trade, had begged to come into communication with us, but we have done nothing to assist toward bringing our nation and theirs closer together by providing the facilities for interchange of commodities. They have to depend for the movement of their commerce upon men in Hamburg or some other European nation. We are also handicapped in our trade with South America by lack of proper banking facilities. Mr. Elihu Root told the truth when he said that there was nothing in the world that we need more to get active on than in securing the proper means of communication with our southern neighbors. Addressing the Pan-American Conference, he said that the solution of that problem would do more to solve all the questions that had been raised in the previous four days in that great conference, and that with it all difficulties would disappear as the dews disappear in the morning. It is simply a matter of having the ships, and we are simply handicapped in our foreign trade because of the lack of them.

We have tried in this State to set the pace for every State in the United States along the line of rehabilitating the American flag. We have written into the constitution of this State exemption from taxation for a period of fifteen years from the time when an American built ship goes into commission. Notwithstanding this, paradoxical as it may seem, every congressman coming from the State of Louisiana, so far as he has voiced his sentiments and feelings in the halls of Congress in Washington, has been against a ship subsidy; but while our own congressmen vote one way, our own people by constitutional amendment said, "We will do our utmost to rehabilitate the American flag and make this port the gateway of the Mississippi valley. We will do what we can to put our flag on the high seas in a commercial sense." Mr. Root said that we should set the pace because it is necessary to get something. The trouble with most of us is that we have gotten down to the point that we feel Uncle Sam should do it for us; we have gotten so that everything we want done we feel we must go to Congress and get special legislation and special financial aid on a theoretical proposition. Mr. Root said, "You ought to get the people to start to running their own lines of ships, and if you find that you cannot do it under proper management, I will guarantee that you will never leave Washington without proper aid and support."

During the course of the inquiry that has been going on for several years as to what use might be made after the completion of the Panama canal with the equipment that has been employed there, somebody said to me, "If I were on the Ways and Means Committee of Congress I would say to the people who want deep water from Chicago to the Gulf, and who want to open up the Ohio and do the thing that will make 19,000 miles of interior waterway absolutely useful, we will give you the means to do it." But do not think until you do it that you have the full benefit of the Panama canal; and when you have done that you will not have done enough unless you also create the facilities that will make all of those waterways available. I want to hold you down to something that is practical, that is not mere speculation. When the canal is finished we want to have something ready to make the best use of it with. We want to sit down on the banks of the river and see the boats go by. When the canal is finished, only 47 miles long, we want to see passing through the locks American built and owned ships carrying our commerce to the markets of the world. We want our own ships to make that canal available as well as the ships of Germany, England, France and Italy. There are many thousands of undeveloped acres in our western country. We are learning how to irrigate them and make them productive; and when all that has been done we want an outlet for the teeming harvests, for the bountiful crops. We want the means of ocean transportation that will enable us to make all of our natural advantages productive, or otherwise our natural advantages are practically a curse.

The development of the Mississippi river is absolutely contingent on our having the ships in this port which will secure its commerce. Upon checking the record of eleven years in this port there are only three ships that I have been so far able to locate that came in here and reasonably and diligently sought general cargo. They came into this

port, tied up to our wharves and sought cargoes in bulk. Outside of one or two regular liners whose business it is absolutely to carry raw materials to Europe—I am not talking about European trade, because I have always maintained that if they to and from their own country to ours can run their ships and we constantly sit by and permit them to do it, that it is a matter of the survival of the fittest.

We sent to Brazil this past year an envoy, and had him in Brazil most of the year, asking the Brazilian government to give proper recognition to our trade. The Brazilian President and his Cabinet all agreed to it. Where was our trouble? Our trouble was through the monopolization of the foreign steamship lines whose agents said everything that was possible to decry our effort and kill it in its infancy. We need to do something and do it quickly, or the time will arrive when their doors will be forever closed against us. I want to call attention to the fact that in Porto Rico, Cuba, the east coast of Mexico, the percentage of the balance of trade with the United States is always over fifty per cent. With Argentina and Brazil where we have hands off there is eight to twelve per cent balance of trade against us.

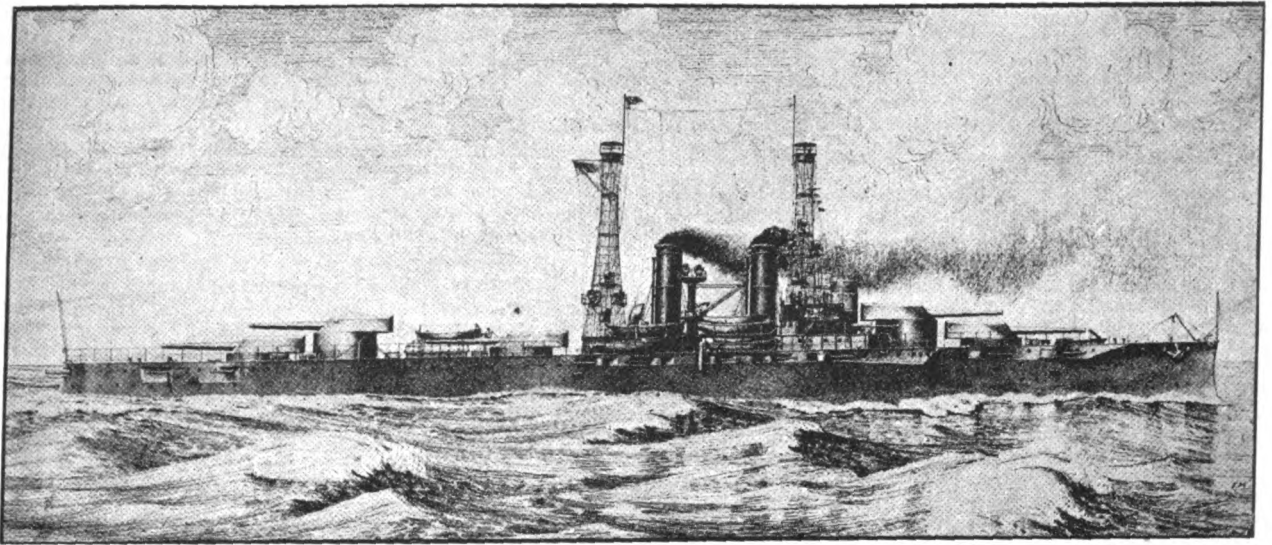
Now in Cincinnati, when the matter was called to their attention, United States Senator Pomerene made an intelligent address along the lines of trade development. A city like Cincinnati, on the banks of the Ohio river, one of the great arms of the Mississippi river, has the greatest possibility in the world right in front of it to command the trade of the world. It has an immense vantage point in the shape of its river. If it will broaden its horizon down to the point where the Ohio comes in contact with the Mississippi, and from that point look beyond to the Panama canal, it will see a wonderful prospect for entering the markets of the world; but until we can get the ships that prospect can never be realized. I told them that in Cincinnati and the people acknowledged that it was something they had never thought of before, for they are not a maritime people. I told them that the congressmen in the valley had defeated the Humphries bill, and the Humphries bill was never anything in the world but a revival of the bill of March 3, 1891, with a simple change in the speed of the ships to eighteen knots instead of sixteen.

We took the matter up with President Taft and called his attention to it. We urged upon him the necessity of the rehabilitation of our merchant marine. We called attention to the fact that when the Panama canal is finished we will suffer the horrible ignominy of having no ships to make use of it.

We have had within the last six weeks a visit from one of the principal agents of one of the largest Japanese lines. With him was the Japanese Consul in Chicago. They visited this port with the idea of seeing whether it was better to use the port of Galveston or the port of New Orleans for the Japanese line as soon as the American canal is finished. So in the near future the Japanese and Chinese from the Far East will come into our ports with their cheap labor, and will regulate the price of our labor as may suit their purposes. I think it is a wonder why we in the United States do not remedy the present conditions in some way or other and try to take our place in a maritime way among the nations of the world. There is no reason why we should not become a great maritime people. We ought to at least be able to take care of our own commerce. There is no more psychological moment to do this than just prior to the opening of the Panama canal. The Brazilians have sent a telegram in which they have said that we should put on a line of American ships and they will become one of our greatest customers, and they will help us to do more for our flag than we have ever yet done for ourselves.

I do believe that the time has come when the Mississippi valley must arise to the importance of the present opportunity. I believe that this great Mississippi river offers the line of least resistance for the transfer of the commodities of an immense territory stretching from the Alleghenies on the east to the Rocky mountains on the west, and that all of this vast commerce will contribute to the growth of the South and especially to the port of New Orleans if it comes this way, and it will do it if we can build the ships to carry it."

A contract has been awarded to a Dublin, Ireland, firm for the construction of two fishery protection cruisers, which are expected to be in operation on the Canadian Pacific coast at an early date.



U. S. Battleship "New York" Recently Launched at New York Navy Yard

## NATIONAL NAVAL RESERVE

THE subjoined correspondence is self-explanatory. It is unnecessary to dwell upon the supreme importance of an efficient naval personnel and any well-directed efforts to that end should receive all public support and sympathy. Battleships without efficient crews are as useless as the proverbial "painted ship upon a painted ocean," and every encouragement must be given and no reasonable expense spared to improve the conditions of our naval service throughout all ranks. We quote from a letter recently received from Representative Steven B. Ayres, who states:

"In this connection it is to be noted that the nationality of the crews on our battleships has changed materially in the last twenty years. A large proportion of these men are now American citizens and one cannot watch a parade of our marines and jackies without a feeling of pride that we are represented by such a fine class of men."

At the same time it must be remembered that the extreme importance of the "man behind the gun" is a relic of popular tradition and delusion, inasmuch as the efficiency of modern naval gunnery depends upon the science of applied mathematics and mechanics as directed by highly trained technical officers.

H. B. J.

Branch Hydrographic Office,

Port Townsend, Wash., November 7, 1912.

Pacific Marine Review, Seattle, Wash.

Gentlemen: Will you kindly give all publicity possible to the enclosed circular in re organization of a National Naval Reserve?

I am sure that you will appreciate the importance and value of this move on the part of the Navy Department, and I shall be deeply indebted to you for any assistance, suggestions or criticisms that you may be able to give that will help this office to carry out this work in an efficient and successful manner.

Yours very respectfully,

S. H. LAWTON, JR.,

Lieutenant, U. S. Navy, in Charge.

To the Officers and Men of the Merchant Marine, Yachts Skilled Trades, Etc.:

1. The Navy Department desires to collect data preparatory to the formation of a National Naval Reserve, under such conditions as Congress may authorize.

2. Your attention is therefore invited to the following general outline of the plan of such Naval Reserve as prepared by the Navy Department. It is earnestly requested that you assist in this important work for the Government

by carefully reading the plan as proposed, and then by expressing your personal intentions in the matter. For the latter purpose mailing post cards may be obtained at all Branch Hydrographic Offices, all Naval Recruiting Stations, Maritime Exchanges, Seamen's Clubs, etc. Without this assistance—without an expression of opinion on the part of the earnest patriotic citizens who are available for such a Reserve—progress in its formation will be very slow. Further, it may be stated that the Department will be glad to receive suggestions embodying the views of those who contemplate joining the Reserve. For it is realized that in a country like ours, when all military service is the voluntary act of the individual, involving in all cases certain sacrifices of family and business affairs, the views of the individuals will assist in accomplishing the best results.

3. There is little need of setting forth reasons for the necessity of a Reserve. Experience has shown that war conditions will double the peace demands for personnel. This increase in personnel will be required instantly on the outbreak of hostilities, and will go:

(a) To the manning of the Reserve Fleet, which each year will gain in size and power.

(b) To completing to a war basis the complements of the ships of the Active Fleet.

(c) To commissioning an enormous fleet of auxiliaries.

4. The complement of the modern man-of-war shows about 50 per cent to be skilled labor. Nearly all skilled trades are represented in this list—machinists, oilers, water-tenders, all classes of electricians, shopmen, etc. Skilled men in all these trades can find their place on board ships, taking with them their vocation in civil life. The Department's desire is to so far know each man's special fitness that when he goes on board ship he may step at once into the position which will conduce most to his satisfaction and the efficiency of the service.

5. Attention is particularly invited to section 4 of the Department's plan of the Reserve. By this it is intended that members of the Reserve should have a period of active service with the fleet. This period may be a short annual one—a maneuver of mobilization, or a more protracted one at the convenience of the individual. It is believed possible that opportunities will present themselves; the period during which a vessel may be undergoing repairs, or, in the cases of the Great Lakes and northern waters, the period of inaction during the closed season of navigation, may offer such an opportunity.

6. The Department's plan does not contemplate a financial bonus to the individual, but rather to assist him to keep in touch with the other members by providing places of assembly, and by uniforming, equipping and giving him an opportunity under the same conditions of pay, subsistence and transportation as exist in the Navy to train with the fleet for the serious service in time of war, which it is not doubted he will give if required.

7. All communications on this subject should be ad-



addressed to the Office of Naval Reserve, Navy Yard, Washington, D. C.

BEEKMAN WINTHROP,  
Acting Secretary of the Navy.

Navy Department,  
Washington, D. C., October 17, 1912.

# An Outline of the Navy Department's Plan of a National Naval Reserve

## Requirements:

(1) Provided, that all persons enrolled in the Naval Reserve shall agree to respond to a call by the President for service in the Regular Navy in time of war or when war is threatened.

(2) Provided, that no person shall be first enrolled who is over 40 years of age, and that persons who are between the ages of 40 and 45 years may re-enroll, but the enrollment of all persons in the Naval Reserve shall terminate upon their reaching the age of 45 years.

(3) Sec. 3. That those enrolled in the Naval Reserve shall be subject to service in the United States Navy at the call of the President of the United States, who shall have power, in his discretion, to call into service any or all of the Naval Reserve in case of war, or when war is threatened, for a limited period, to be determined by the President, not to exceed two years.

(4) Sec. 4. That members of the Naval Reserve may voluntarily enter active service for such drills, exercises or instructions as the Secretary of the Navy may prescribe for periods not to exceed one year at any one time, during which period they shall be subject to the same articles, rules, regulations and discipline, and receive the same pay, allowances and privileges as the officers and men of the Navy of like rank or rating, but no such pay, allowance or privileges shall be in excess of those for the period of duty actually performed by such officers and men; and the Secretary of the Navy is hereby authorized to provide and furnish such necessary allowances of uniform and subsistence, either in money or in kind, and such actual traveling expenses as he may prescribe to officers and men of the Naval Reserve who perform active service; and the Secretary of the Navy is further authorized to provide for the service in time of peace of officers and men of the Naval Reserve on board ships of the Navy.

## To Be Enrolled:

(a) Line Officers as Lieutenants, Lieutenants (J. G.), and Ensigns.

(b) Medical Officers as Assistant Surgeon.

(c) Pay Officers as Assistant Paymaster.

(d) Warrant Officers as Warrant Machinist.

(e) Petty Officers in all branches of the Navy.

Sec. 7. That officers of the Naval Reserve shall have their names borne in the Navy Register, and officers of the Naval Reserve commanding private vessels under the United States flag shall be permitted to fly a Naval Reserve burgee of such design and under such regulations as the Navy Department may prescribe, and such burgee shall not otherwise be flown from any vessel. This privilege, and that of continuing to wear the uniform, may be extended to ex-officers of the Naval Reserve whose connection therewith has been terminated because of the age limit.

Sec. 8. That officers of the Naval Reserve, when called into active service in time of war or when war is threatened shall be nominated by the President, and, by and with the advice and consent of the Senate, shall be commissioned as officers of the Regular Navy for service during war as acting officers in such grades not above the grade held in the Naval Reserve as may be determined under regulations to be prescribed by the Secretary of the Navy: Provided, that officers who have resigned from the Regular Navy with a higher rank than that of lieutenant shall be commissioned in the grades held by them in the Navy at the time of their resignation.

Sec. 9. That in time of war or when war is threatened the Secretary of the Navy shall issue to machinists of the Naval Reserve, who are called into active service, warrants as acting machinists in the Navy.

Sec. 10. That upon being called into active service in time of war or when war is threatened, petty officers and men of the Naval Reserve shall be regularly enlisted in the Navy.

Sec. 12. That every officer and man enrolled in the Naval Reserve shall be furnished by the Navy Department with such certificate of enrollment as the Secretary of the Navy may prescribe.

Sec. 13. That the Secretary of the Navy is hereby authorized to provide and issue to every person enrolled in the Naval Reserve a distinctive button which may be worn with civilian dress.

Sec. 14. That the Naval Reserve may wear such uniform,

at such times and under such regulations, as may be prescribed by the Secretary of the Navy.

Sec. 15. That all officers, petty officers and enlisted men enrolled in the Naval Reserve shall be exempt from service in the Organized Militia and from jury duty in the Federal Courts.

Sec. 18. That any officer or man enrolled in the Naval or Marine Corps Reserve may, except in time of war or when war is threatened, terminate his connection with said Reserve at any time by giving notice thereof to the Navy Department.

Sec. 19. That when any member of the Naval or Marine Corps Reserve is disabled by reason of wounds or disabilities received or incurred in the service of the United States, he shall be entitled to all the benefits of the pension laws existing at the time of his service, and in case such member dies in the service of the United States, or in returning to his place of residence after being discharged from such service, or at any time, in consequence of wounds or disabilities received in such service, his widow and children, if any, shall be entitled to all the benefits of such pension laws.

## CANADA'S NAVAL CONTRIBUTION

The Pacific Marine Review welcomes and applauds the recent announcement by Premier Borden that Canada will contribute thirty-five million dollars to the British Imperial Navy for the construction of three battleships.

We condemn the obstruction by the Liberal Opposition to the above resolution as any other course than the appropriation of an amount sufficient for the construction of at least two, and still better three, battleships, would be a disappointment to the public of both Canada and Great Britain.

We quote the following from a memorandum on the general naval situation which was prepared by the board of admiralty prior to the announcement that Canada would "do her share":

"The prime minister of the Dominion of Canada has invited His Majesty's government through the board of admiralty to prepare a statement of the present and immediately prospective requirements of the naval defence of the Empire for presentation to the Canadian parliament if the Dominion cabinet deem it necessary.

The rapid expansion of Canadian sea-borne trade and the immense value of Canadian cargoes always afloat in British and Canadian bottoms here require consideration. On the basis of the figures supplied by the board of trade to the imperial conference of 1911, the annual value of the overseas trade of the Dominion of Canada in 1909-10 was not less than £72,000,000, and the tonnage of Canadian vessels was 718,000 tons, and these proportions have already increased and are still increasing. For the whole of this trade wherever it may be about the distant waters of the world, as well as for the maintenance of her communications, both with Europe and Asia, Canada is dependent, and has always depended upon the Imperial navy, without corresponding contribution of cost.

Further, at the present time and in the immediate future Great Britain still has the power, by making special arrangements and mobilizing a portion of the reserves, to send, without courting disaster at home, an effective fleet of battleships and cruisers to unite with the Royal Australian navy and the British squadrons in China and the Pacific for the defence of British Columbia, Australia and New Zealand. And these communities are also protected and their interests safeguarded by the power and authority of Great Britain so long as her naval strength is unbroken.

This power, both specific and general, will be diminished with the growth not only of the German navy, but by the simultaneous building by many powers of great modern ships of war.

Whereas, in the present year, Great Britain possesses 18 battleships and battle cruisers of the dreadnought class against 19 of that class possessed by the other powers of Europe, and will possess in 1913 24 to 21, the figures in 1914 will be 31 to 33; and in the year 1915, 35 to 51.

The existence of a number of navies all comprising ships of high quality must be considered in so far as it affects the possibilities of adverse combinations being suddenly formed. Larger margins of superiority at home would, among other things, restore a greater freedom to the movements of the British squadrons in every sea, and directly promote the security of the dominions.

Anything which increases our margin in the newest ships diminishes the strain and augments our security and our chances of being left unmolested.

Whatever may be the decision of Canada at the present juncture, Great Britain will not in any circumstances fail in her duty to the over-sea dominions of the crown.

She has before now successfully made head alone and unaided against the most formidable combinations and she has not lost her capacity by a wise policy and strenuous exertions to watch over and preserve the vital interests of the Empire.

The admiralty are assured that His Majesty's government will not hesitate to ask the House of Commons for whatever provision the circumstances of each year may require. But the aid which Canada could give at the present time is not to be measured only in ships or money. Any action on the part of Canada to increase the power

and mobility of the Imperial navy, and thus widen the margin of our common safety, would be recognized everywhere as a most significant witness to the united strength of the Empire, and to the renewed resolve of the over-seas dominions to take their part in maintaining its integrity.

The prime minister of the Dominion having enquired in what form any immediate aid that Canada might give would be most effective, we have no hesitation in answering after a prolonged consideration of all the circumstances that it is desirable that such aid should include the provision of a certain number of the largest and strongest ships of war which science can build or money supply.

## SEA STRENGTH

In order to answer the frequent inquiries of societies and persons throughout the country interested in the maintenance of the Navy and its relative strength and importance in comparison with foreign navies, the following information has been compiled by the Navy Department, Office of Naval Intelligence:

Table I—Vessels Built

	Battleships, Dreadnought type (a)	Battleships (b).....	Battle cruisers (c).....	Armored cruisers.....	Cruisers (d).....	Destroyers .....	Torpedo boats.....	Submarines .....	Coast defense vessels (e)
England .....	16	40	7	34	73 (k)	140 (k)	49	70	0
Germany .....	10	20	3	9	38	119	9	26	3
United States .....	8	25	0	11	15	42	20	23	4
France .....	0	20	0	21	10	75	157	76	2
Japan .....	2	13	0	13	14	58	54	11	2
Russia .....	0	8	0	6	9	98	14	31	2
Italy .....	1	8	0	9	5	24	48	18	0
Austria .....	1	6	0	3	4	12	40	6	6

(a) Battleships having a main battery of all big guns (11 inches or more in caliber).

(b) Battleships of (about) 10,000 tons or more displacement, and having more than one caliber in the main battery.

(c) Armored cruisers having guns of largest caliber in main battery and capable of taking their place in line of battle with the battleships. They have an increase of speed at the expense of carrying fewer guns in main battery, and a decrease in armor protection.

(d) Includes all unarmored cruising vessels above 1,500 tons displacement.

(e) Includes smaller battleships and monitors. No more vessels of this class are being proposed or built by the great powers.

(f) England has no continuing shipbuilding policy, but usually lays down each year 4 or 5 armored ships, with a proportional number of smaller vessels.

Note.—Vessels undergoing trials are considered as completed.

Table II includes vessels authorized but not yet laid down, as well as those actually under construction.

Table II—Vessels Building or Authorized

	Battleships, Dreadnought type.....	Battle cruisers.....	Cruisers .....	Destroyers .....	Torpedo boats.....	Submarines .....
England (f) .....	9	4 (k)	17 (k)	44 (k)	0	16 (k)
Germany (g) .....	7	3	5	12	0	6 (l)
United States .....	5	0	0	14	0	24
France .....	7	0	0	9	0	13
Japan (h) .....	1	4	0	0	0	5
Russia (l) .....	7	4	0	9	0	8
Italy .....	7	0	2	11	21	2
Austria .....	3	0	3	6	12	7

(g) Germany has a continuing shipbuilding program, governed by a fleet law authorized by the Reichstag. For 1912 there are authorized 1 battleship, 1 battle cruiser, 2 cruisers, 12 destroyers. Eventual strength to consist of 41 battleships, 20 armored cruisers, 40 cruisers, 144 destroyers, 72 submarines.

(h) \$78,837,591 authorized to be expended from 1911 to 1917 for the construction of war vessels.

(i) \$4,760,000 authorized for experiments and further construction.

(k) Includes vessels of colonies.

(l) Russian shipbuilding program provides for the completion by 1918 of 4 battle cruisers, 8 small cruisers, 36 destroyers, and 18 submarines. The battle cruisers have been contracted for and are included in the above table.

The following vessels are not included in the tables: Ships over twenty years old from date of launch, unless they have been reconstructed and rearmed within five years. Torpedo craft over fifteen years old. Transports, colliers, repair ships, converted merchant vessels, or any other auxiliaries. Vessels of less than 1,500 tons, except torpedo craft. Torpedo craft of less than 50 tons.

## Relative Order of Warship Tonnage

Present Order (Tonnage Completed)		As Would Be the Case if Vessels Now Building Were Completed	
Nation.	Tonnage.	Nation.	Tonnage.
Great Britain .....	1,978,212	Great Britain .....	2,478,152
Germany .....	837,982	Germany .....	1,124,257
United States .....	773,107	United States .....	898,345
France .....	630,769	France .....	806,729
Japan .....	471,558	Japan .....	613,724
Russia .....	286,930	Russia .....	459,207
Italy .....	224,837	Italy .....	416,310
Austria .....	178,149	Austria .....	260,751

## NEW TANK STEAMERS FOR UNION OIL COMPANY OF CALIFORNIA

**T**HE four steamers now being built in England to carry oil for the Union Oil Co. of California are of the usual type adopted for conveying crude petroleum. Following the most modern practice, their designers have made use of the longitudinal system of framing as recently developed by Mr. Isherwood, which is rapidly gaining favor among shipowners and shipbuilders, particularly for oil vessels.

These vessels are to be highest class, special survey, Lloyd's 100 A1, and are of the following principal dimensions:

Length between perpendiculars.....	425' 0"
Breadth moulded .....	56' 8"
Depth moulded to upper deck.....	33' 0"
Sheer forward .....	10' 0"
Sheer aft .....	5' 2"
Height of 'tween decks.....	7' 9"
Height of poop.....	7' 6"
Height of bridge.....	7' 9"
Height of forecastle .....	7' 0"
Draft loaded .....	26' 0"
Deadweight, long tons.....	10,075

This also includes 9,000 tons cargo oil, 1,000 tons fuel oil and 75 tons stores, etc.

panion, with skylight on top. Over each cofferdam there are two small hatches with oil-tight covers.

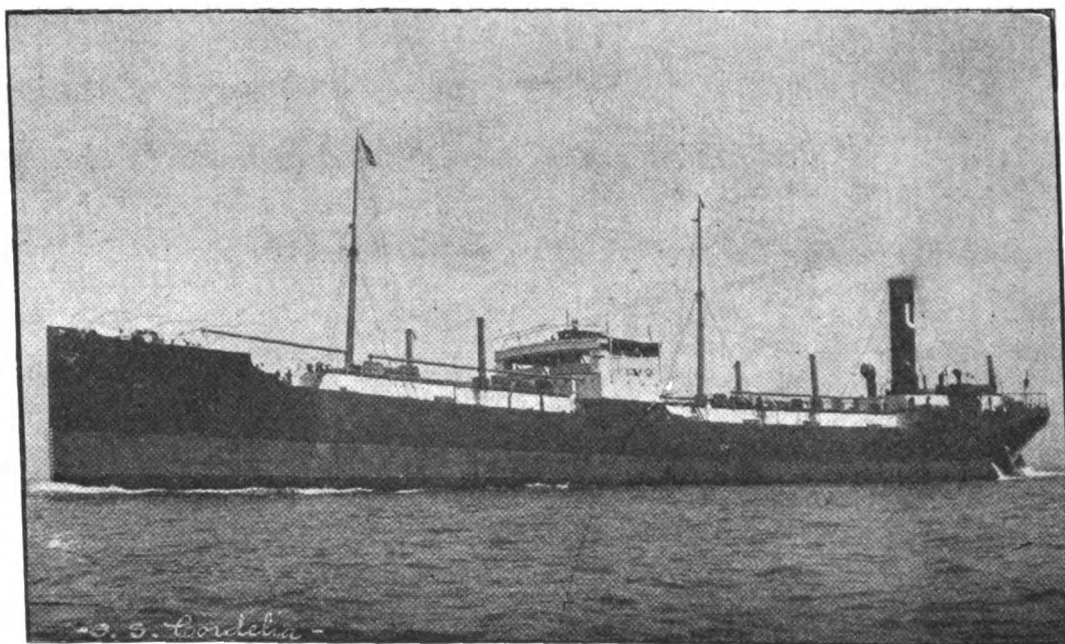
Under the forecastle deck are berths for fourteen firemen and twelve seamen, in separate compartments.

There are three oil pumps; two are horizontal duplex, Worthington 12x10 $\frac{1}{4}$ 10", and the other is a 20x14x18" duplex, outside packed Worthington piston pump.

There is a 6x8 $\frac{1}{2}$ x6" Worthington horizontal duplex ballast pump for pumping out forehold, fore deep tank, forepeak and cofferdam. The oil piping is 10" diameter on double all round system, arranged to discharge over both sides and over stern on port side.

There are eighteen main oil-tight compartments, nine on port side of middle line bulkhead and nine on starboard side. The 'tween decks at sides of expansion trunks are made oil-tight for light oils, so as to form three summer tanks each side.

Water ballast may be carried under main engines, in after peak, in forepeak and in deep tank under forehold. There is a fresh water tank under boilers. The fuel oil is carried in poop over boilers and at sides of fore part of boiler room.



**S. S. "Cordelia" Now Engaged in South American Service of Union Oil Co. of Calif. Practically Same Size and Design as Tankers Now Building**

Following the usual practice, her designers have put her machinery aft. There are four Scotch Marine boilers, about 14' 0" diameter and 12' 0" long, equipped with an oil burning system working on the mechanical atomization principle, as developed by the Wallsend Shipway & Engineering Co., Ltd. There is one three cylinder, triple expansion engine of the usual type.

Forward of the boiler room there is a cofferdam, then four oil compartments, each 27' 6" long, divided in two by a middle line bulkhead; then a pumproom 8' 0" long, with floor 7' 0" above ship's bottom; then five oil compartments, each 27' 6" long; then a cofferdam; then a cargo hold, with deep tank under for oil fuel or water ballast and then the forepeak and chain locker.

The trunk for expansion does not extend above the weather deck. Over each oil compartment is an oil-tight hatch 8' 0"x6' 0", and over each wing compartment in the 'tween deck spaces, two oil-tight hatches 6' 0"x3' 0". There is a cargo hatch 9' 6"x2' 0" over the forehold. At each of the two steel masts is a winch; there is a heavy boom on each mast. Over the pumproom there is a steel com-

Everything customary and necessary for the oil trade, in which these vessels will run, has been provided. Especial attention has been given to the living quarters of the officers and crew. The fittings are plain, but very substantial; the rooms large, well lighted and well ventilated. Awnings are fitted over poop, bridge and forecastle and large ventilators are fitted to give plenty of fresh air in the engine and boiler rooms.

Their loaded trial speed will be 11 knots per hour, and the average running speed loaded about 10 knots, which is about the most economical speed on the routes upon which it is proposed to run the vessels. As they will often have to discharge their cargoes while riding to anchors in open and exposed roadsteads, especial attention has been given to the windlasses, anchor gear, bits, chocks, etc., to insure ample strength.

The ships will be ready for service about the end of next year and will be a very interesting addition to the already large fleet of tankers handling California oils in the foreign trade.

## THE HOUGH SHIP CONSTRUCTION

**W**E have received sketches and descriptions of the Hough Ship Construction, covered by patents numbers 822,903 and 1,033,403.

Patent number 922,903 covers the adaptation of a longitudinal trunk by which a maximum strength is secured with a minimum of material, the trunk acting as a deep tank for the storage of fuel oil. This construction offers numerous advantages, and for the storage of oil is decidedly advantageous. This construction was fully discussed in the March issue of 1909 of this journal and it is not intended to go further into the matter.

Patent number 1,033,403 covers a central girder, two sides of which are formed by the inboard sides of twin hatches, a top plate being added near the tops of the hatch coamings.

A midship section is reproduced here for reference, and explains itself.

compensation has been provided for and that the use of web frames will be unnecessary, at least for the depth of vessels which would be used on the Pacific Coast, unless it is intended that heavy deck loads be carried. In this case excessive loads would bear on the beams at the ends of the hatchways, and it is believed that heavy web frames would be necessary at these points as well as additional stanchions, and with two web frames on each side in way of the hatch.

With the great beam in proportion to length existing on Pacific Coast lumber carriers, together with the immense deck loads, it is doubtful if sufficient consideration has been given to the strength of the deck beams and that it is probably necessary to block up the deck and support it on the hold cargo. While this would be satisfactory if care is exercised in loading, it would be much more satisfactory to arrange the ships structure to take the deck

"B" LONGITUDINAL GIRDER OF EXTRA STRENGTH SUPPORTING DECK CARGOES ALSO FORMING THE LOWER CHORD OF A GIRDER OF WHICH THE SHIP'S SIDE "C" IS THE TOP CHORD AND THE DECK PLATE "D" IS THE WEB

"A" GIRDER OF EXTRA STRENGTH SUPPORTING DECK CARGOES ALSO FORMING A CONTINUOUS LONGITUDINAL TIE

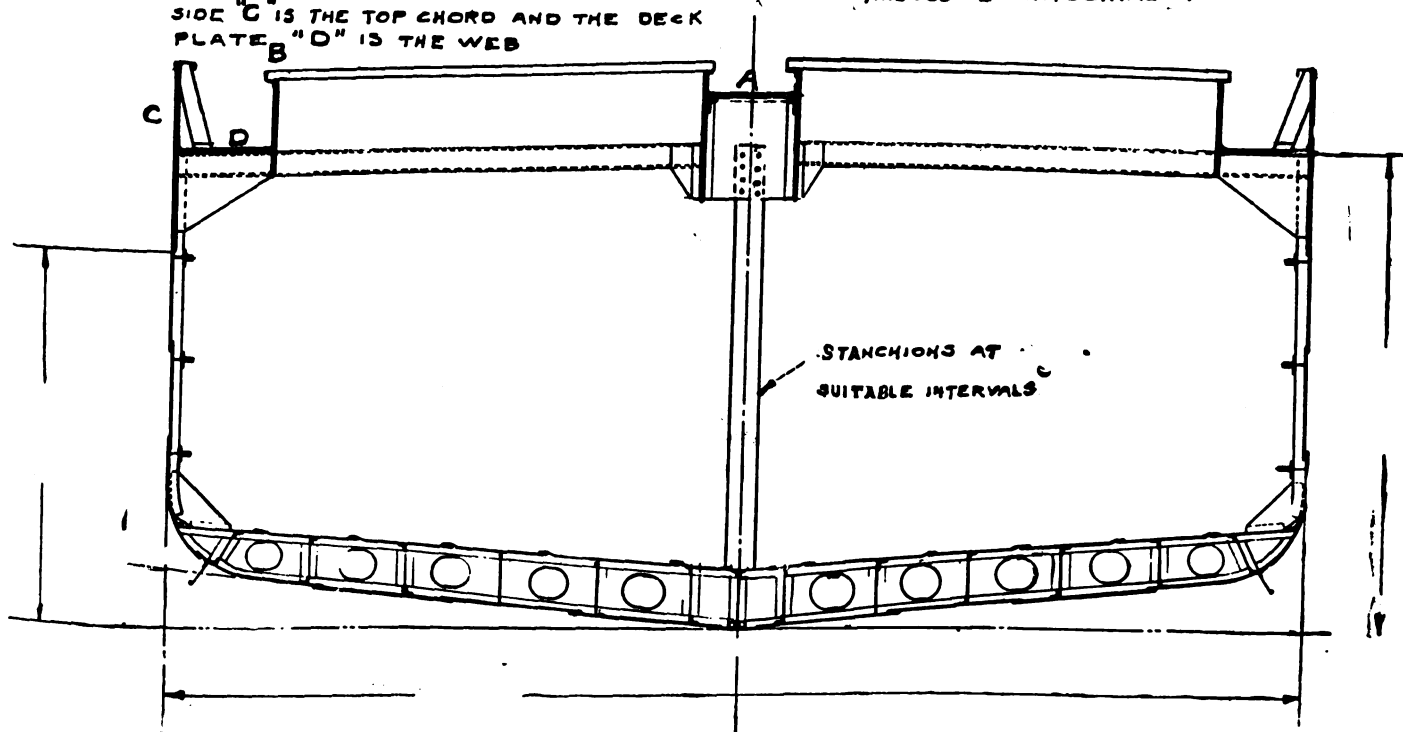


FIG. 1-

HOUGH'S IMPROVED HULL CONSTRUCTION

SCALE  $\frac{1}{8}$ " = 1 FT

U.S. PATENT. No 1033403. JULY 23<sup>rd</sup> 1912.

The aim of the patentee in this construction is to obtain a vessel with large hatchways for the economical handling of lumber, steel material and other like cargo. The size of the hatches are approximately forty-eight feet long and eighteen feet wide. With six of these hatches it will be seen that considerable care must be taken in providing compensation.

With the girders at the center and the side arranged as indicated in the sketch and increased in thickness above the usual requirements, it is believed that sufficient com-

load without any temporary support from shoring.

In the present case while no estimates of strength are available it would of course be an easy matter to approximate to the requisite material required for the deck load only, by finding the load per square foot of deck area and applying the proportionate part to each beam. But in addition to this load we have the weight of water coming aboard, together with the longitudinal stress and the transverse stresses all acting at once, so that the problem becomes quite complicated, and the only satisfactory solu-



tion is that by comparison with other vessels of similar design but with ordinary hatches.

Without going into the matter very thoroughly we are

not prepared to commit ourselves definitely as to whether sufficient or insufficient compensation has been provided, but we rather lean to the former view.

## LUMBER SCHOONERS UNDER CONSTRUCTION AT UNION IRON WORKS CO.

**T**HE three lumber schooners now under construction at the yards of the Union Iron Works Company, San Francisco, are to be known as the "William Chatham," the "H. T. Scott" and the "Aroline."

Hull No. 106, the "William Chatham," is for the Leop Lumber Co.; Hull No. 107, sister ship, the "H. T. Scott," is for Eschen & Minor, and Hull No. 108, the "Aroline," is for Hill & Jerome.

### General Description of Hulls 106 and 107

Length .....	235 ft. 0 in.
Breadth .....	42 ft. 6 in.
Depth .....	18 ft. 6 in.
Draft .....	18 ft. 0 in.
Displacement .....	3,648
Block Coefficient .....	.71
Indicated Horsepower .....	1,250
Speed .....	10 knots
Cargo Lumber .....	1,500,500 ft.

The vessel is a single screw, steel, oil-burning lumber schooner rigged as a two-masted fore and aft schooner, with straight stem and elliptical stern and complete steel deck extending fore and aft with short forecabin and poop.

The forward and after peaks and double bottom tanks Nos. 1 and 2 are constructed and fitted for carrying either water ballast or fuel oil. Double bottom tanks Nos. 3 and 4 are fitted as the regular fuel tanks. Double bottom tank No. 5, under the engine room, is fitted for carrying fresh water only. All of the double bottom tanks are divided by oil or watertight centerline keelson. The various tanks have approximately the following capacities:

	Tons
Fore Peak, Water .....	80
After Peak, Water .....	87
Double Bottom No. 1, Water .....	145
Double Bottom No. 2, Water .....	164
Double Bottom No. 3, Oil .....	84
Double Bottom No. 4, Oil .....	129
Double Bottom No. 5, Fresh Water .....	29
Two Settling Tanks .....	12

Total .....

The vessel is further subdivided by transverse watertight bulkheads extending to the main deck, one at the fore peak, one forward of the machinery space and one at the after peak.

Accommodations forward provide for 16 seamen, quarters aft for captain, one chief officer, second officer, third officer, one chief engineer, one assistant engineer, one second assistant engineer, three firemen, three oilers, steward, cook, two waiters, one spare room, and room for owners, also sailors' mess room, firemen's mess room, galley, pantry, dining saloon, ice house, etc. Pilot house, chart room and flying bridge are above the mates' room.

There are three double drum friction winches, one steam capstan and electric lighting plant. The two winches amidships are located 14 feet above the main deck on a house surrounding the main mast.

The two cargo hatches are of large dimensions, 26 feet long by 16 feet wide. The coamings being sufficiently strong to act as girders supporting the beams and transmitting the weight due to the deck load to box pillars located at the center at each end of the hatches. No other pillars being fitted in the vessel's cargo hold.

The electric light installation consists of two direct connected 110-volt generator sets with single cylinder engines with sufficient capacity to carry the full load, which will be equivalent to 120 16 candlepower incandescent lights. One of the generators has a capacity of 10 kilowatts and

the other 2½ kilowatts, the small one being intended for day use.

The plant is complete with all necessary wiring, fixtures, distributing panels and conduit and has also one 20-ampere mirror reflector searchlight, 6 cargo arc lights, and one set running lights.

The propelling engines are triplex expansion, direct acting inverted. The diameter of the high pressure cylinder is 19 inches, intermediate 31 inches, and low pressure 50 inches, all having a common stroke of 40 inches. The high and intermediate cylinders are fitted with piston valves with the high pressure valve on the forward end and the intermediate between. The low pressure has a double ported slide valve on the after end. The valves are worked by eccentrics and slide link motion with a variable cut off on each drag link lever.

### Hull No. 108—General Dimensions

Length .....	225 ft. 0 in.
Breadth .....	41 ft. 0 in.
Depth .....	17 ft. 6 in.
Depth of Load .....	13 ft. 4 in.
Depth of Double Bottom .....	5 ft. 0 in.
Height of Poop .....	8 ft. 0 in.
Height of Winch House Amidships .....	14 ft. 0 in.
Draft of Water .....	16 ft. 9 in.
Block Coefficient .....	.66
Cargo Carrying Capacity, Lumber .....	1,100,000
Indicated Horsepower .....	1,250
Speed, Loaded .....	10½ knots

The vessel is a single screw lumber schooner, rigged as a two-masted fore and aft schooner, with straight stem and elliptical stern and a complete steel deck extending fore and aft with short forecabin and poop. The forward and after peaks and double bottom tanks 1 and 2 are constructed and fitted for either fresh water ballast or fuel oil. Double bottom tanks 3 and 4 are fitted as regular fuel tanks. Double bottom tank No. 5 under the engine room is fitted for fresh water only. The various tanks have approximately the following capacity:

	Tons
Fore Peak, Water .....	32
After Peak, Water .....	68
Double Bottom No. 1, Water .....	106
Double Bottom No. 2, Water .....	118
Double Bottom No. 3, Oil .....	79
Double Bottom No. 4, Oil .....	117
Double Bottom No. 5, Fresh Water .....	52
2 Settling Tanks .....	26

Total .....

The double bottom extends from the collision bulkhead to the boiler room bulkhead at a height of 5 feet and then under the engine and boiler room space at a height of about 36 inches, and is fitted throughout its length with an oil tight center keelson.

The vessel is further subdivided by transverse bulkheads extending to the main deck, one at the fore peak and one forward of the machinery space and one at the after peak.

In addition to the space allotted to the crew, accommodations are provided for passengers, as the plans for this schooner show nineteen state rooms, a social hall and a smoking room.

There are three double drum geared friction winches, one steam capstan and electric lighting plant. The electric lighting plant and machinery is the same as specified for the first two vessels.

## STEAMERS FOR W. R. GRACE & CO. RAPIDLY NEARING COMPLETION

The four steamers now under construction at the yards of Wm. Cramp & Sons, Philadelphia, for W. R. Grace & Co., are to be named, "Santa Cruz," "Santa Clara," "Santa Catalina" and "Santa Cecilia."

## NOVEL GERMAN CAR FERRYBOAT

An unusual type of car ferryboat has just been completed for the port of Hamburg. The essential feature of the new vessel is a movable deck, with a lifting power sufficient to provide for an elevation of 5 meters (16.4 feet) with a load of six freight cars, three on each side. The vessel itself is of 470 tons gross measurement, and is 35.5 meters (116.47 feet) long, 15.5 meters (50.85 feet) in breadth, and 3.8 meters (12.46 feet) deep. It has two triple expansion engines of 640 indicated horse power. The lifting of the deck is made possible by a high steel superstructure, on the top of which is the officers' bridge, from which point all the operations of loading, unloading, and navigation can be carried on.

## ADDITIONS TO FLEET OF MATSON NAVIGATION CO.

The two steamers now building at the yards of the Newport News Shipbuilding Company for the Matson Navigation Company's Hawaiian service have been named the "Matsonia" and "Manoa" and are rapidly nearing completion.

The following are the vessels which form the present fleet of this company and which are in service between Puget Sound ports, San Francisco and the Hawaiian Islands: S. S. "Wilhelmina," passenger and freight; S. S. "Lurline," passenger and freight; S. S. "Hilonian," freight; S. S. "Enterprise," freight; S. S. "Hyades," freight; S. S. "Honolulan" (chartered), passenger and freight.



The Raymond Releasing Hook, of which this cut is descriptive, is the only device for the purpose intended used in the United States Navy and the several Marine branches of our Government. It is approved by the Board of Super-vising Inspectors' Steam Vessel Service, and under that approval will be found in use on 75 per cent of the ocean and lake passenger carrying vessels, together with those engaged in freight carrying both steam and sail. It is largely used in the German Navy, and foreign vessels, whose certificates of inspection have expired in this country, and for this reason are amenable to the U. S. Inspection Rules, have adopted it after an examination into its merits. Its reliability to operate in time of excitement and emergency, and the certainty and despatch with which it can be attached in the roughest sea or darkest night, a feature not possessed by any other device, accounts for its extensive use.

With the Raymond Releasing Hook and the Star non-toppling Block Device combined the problem and difficulty of boat handling in times of emergency is solved.

The "Star" Non-Toppling and Anti-Fouling Block device is new, simple and efficient, and readily supplies a long-felt need aboard ship. It is easy to attach to blocks already in and is low in price. Primarily it was designed to remedy the trouble, danger and loss of time consequent to the lower blocks of lifeboat tackles capsizing and fouling after the load is released, but obviously the device will be found advantageous when fitted to any double or treble purchase, such as topping lifts, etc.

The difficulties and the seriousness of blocks capsizing and fouling, always experienced with lifeboat gear, is well known. This simple anti-fouling device overcomes these troubles.

Not only is it most desirable to have the tackles and blocks clear for rounding up for the purpose of getting another boat away from the same davits, when required, but it is of great importance to have the blocks clear for quickly hooking on to a returning boat, especially in a seaway or a tideway when delay in this respect may prove more or less fatal. All mariners are aware that not only in a seaway, when quickness of action may mean the saving of a boat and its crew, but during an ordinary boat drill when blocks without this device capsize and foul and when finally cleared and hooked on to the boat the blocks have to be held in vertical position by seamen until the weight is taken on the falls. The "Star" Non-Toppling device solves this problem in a simple and effective manner. Absolutely prevents fouling, keeps the blocks clear and in a vertical position in readiness for quickly hooking on, and they will remain so until the boat is hoisted inboard. Further particulars will be furnished if application is made to James R. Raymond, 8 Bridge street, New York.

# PACIFIC MARINE REVIEW

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## GREETING

As the year 1912 draws to its close it is but natural to revert to the past and to consider the future.

This country, with all civilized countries, is enjoying a period of prosperity such as has not been known for some time. The crops of the soil, the real basis of prosperity, have been plentiful and the reflex of this is shown in all lines of trade.

While it is true that at this writing war menaces the entire continent of Europe it is to be hoped that a wise consideration of the dire results of such a conflict will avert the impending peril. Should the Turk be driven from Europe and the powers recognize the services of the conquerors in the only way in which they should be recognized, mankind will have been benefited and a long step will have been taken in the way of universal peace. At any rate these United States are not likely to be drawn into the conflict.

This country has passed safely through the throes of its quadrennial presidential election and while the result, as always where there is a change in the administration, is looked upon with some misgiving by many, yet it cannot be said that any serious crisis portends. With a new administration changes must occur in the policy of the country but they are not likely to be so radical that any serious result is apprehended by any one. As a proof of this it may be noted that notwithstanding the impending change, trade continued good, with the balance of trade in our favor, steadily increasing prosperity has communicated itself to the shipping industry and all connected with it are now enjoying a much deserved and long looked for revival of profitable work.

The passage of the Panama Canal Bill has caused some little friction between this country and Great Britain but the oil of statesmanship and fair dealing will overcome this and the fraternal relations between the two great nations will not be strained.

From the present outlook the year 1913 will not fall behind its departing sister.

To all of its readers and supporters the Pacific Marine Review extends its heartiest thanks and wishes them, and all others, a Happy Christmas and a very prosperous New Year.

The cost of Japan's participation in the Panama Exhibition is, it is reported, to be spread over three fiscal years commencing with the next one, and the total is expected to reach 1,500,000 yen. Japan spent 800,000 yen on her participation in the St. Louis Exposition, when the prices of commodities were lower than now.

## LIABILITY FOR DAMAGES ARISING IN THE NAVIGATION OF VESSELS—PROPOSED AMENDMENT TO THE HARTER ACT

A bill, known as the Nelson Bill (S 7208), has been introduced into Congress for the purpose of amending the Harter act and will come up for action during the present session.

Prior to the passage of the Harter act in 1893 shipowners trading with the United States were, by the laws of this country, held liable for loss and damage to cargo caused by faults and errors in navigation, that is by the fault or error of the fallible human machines employed to navigate the vessel. All other maritime countries had and have laws which recognize the fact that after a ship has left port the owner or agent has no direct control over its movements, or of the conduct of the officers and crew, and they have relieved the owner from the results of such faults or errors either by direct law or by allowing him such latitude in the making of his contract of carriage as will permit him to exempt himself from such liability by specifying in that contract the particular things from the results of which he desires such exemption.

Under the old law litigation was common and the results frequently unsatisfactory. Did a vessel strand or come into collision the claim of negligent navigation was raised upon the slightest pretext and long and costly litigation followed. Upon taking testimony the judge, who perhaps knew but little of navigation, after weighing the evidence, and considering the matter calmly for days, would come to a decision as to what the navigating officer should have done, a decision that the said officer had to reach in a few minutes or seconds in time of excitement or peril, and find him guilty of negligence, a decision by which the shipowner in no way a party to the alleged negligence, would be compelled to assume the damages resulting to the cargo.

It was to relieve this situation and to make our laws more nearly uniform with those of other maritime countries that the Harter act was passed. By this law the shipowner must still use due diligence to make his ship seaworthy, have her properly manned and equipped and the cargo well and sufficiently stowed. Having done this he is then allowed, it has been decided, to include in his contract of carriage a stipulation exempting himself from liability for loss caused to cargo by faults or errors in navigation. It was inevitable that this act, as is the case with most radical changes by legislative acts, should lead to litigation but after nearly twenty years the Supreme Court has given its interpretation which seems to be final: an interpretation that is eminently just and is quite in line with the laws of other maritime nations.

(For a discussion of the Harter act and the decision of the Supreme Court, referred to, reference is made to Vol. IX, No. 6 of The Pacific Marine Review, June, 1912 issue.)

It is now proposed to amend this law and to take away from shipowners engaged in trade between this country and foreign countries this right of exemption which has been won after years of effort and litigation.

On the face of it, it may seem right and just that a shipowner should be responsible for the wrongful actions of his servants but when it is considered that the owner is not a party to the negligence, that he has done all possible to select a competent crew it seems scarcely just that he should be compelled to pay for damages arising from some momentary act on the part of one of them.

Who will be the sufferer if this amendment is carried? The shipowner must and will protect himself against this increased liability. The cargo owner will not benefit, for if insured as today he can recover his loss from his underwriter. The cargo underwriter, being then subrogated to the rights of the insurer, will if there is a chance, proceed

against the owner and endeavor to recover from the owner for the damages.

The shipowner has, apparently two ways in providing for protection. He may cover his liability in the clubs or he may issue insured bills of lading. In the first case he will be obliged to assume additional expense and this expense must be met by an increase in the freight rates. If he decides on issuing insured bills of lading the cargo owner must pay the premium, an additional expense to him, without any added protection, for in that case he is insuring the second time against a loss recoverable direct from his own underwriters.

As over 90% of all of our foreign commerce is carried in foreign bottoms it is natural that the foreign shipowner will place this insurance in companies of his own choosing, naturally of his own country. If the cargo owner, being compelled for his own protection, takes the insured bill of lading he naturally will not carry any other insurance and this means an immense loss of business to cargo underwriters. But this is not the only feature to consider. In case of loss he must treat with foreign companies who may or may not accept liability, and in event of accepting an adjustment of the claim there is considerable delay in receiving settlement.

The cargo owner must also consider the situation from the standpoint of the banker. As it is now, the exporter may obtain advances from his bank by surrendering the bills of lading and attaching a policy of insurance. If the insurance company taking the risk is not satisfactory to the banker the advance will be denied. How will the banker look on the security of a company of which he knows nothing, a company which is not within the jurisdiction of our courts, and which is too far away for a satisfactory examination.

It may appear that the cargo underwriter will benefit for if the amendment is passed he will be able to recover from the shipowner some of the losses which he now cannot recover but which he is paid to assume. But by forcing the shipowner to protect himself, which protection will be paid for by the cargo owner in case of insured bills of lading he is driving away a large part of his income, and favoring foreign underwriters.

One feature of the proposed amendment is that United States vessels trading coastwise are permitted exemption from liability for faults and errors in navigation. As we are now treating voyages to Porto Rico, the Hawaiian Islands and the Philippines as coastwise, it probably will not be long before these vessels have the same restrictions forced upon them. The country has been calling for some assistance towards the upbuilding of our merchant marine, particularly for foreign trade but such legislation as now proposed is a most decided step against any movement looking to that end.

#### INSURANCES ON HULLS OF STEAMERS IN LONDON

For some time the increased cost of repairs has been pressing heavily upon underwriters and it was felt that something had to be arranged to put the business on a more satisfactory footing. The expanding values of shipping property and a buoyant freight market provided a basis on which something could be done and a series of meetings held in London culminated towards the end of October in an agreement being signed by all the marine insurance companies in London and Liverpool, together with all the leading Lloyd's underwriters.

This agreement provided for an aggregate increase of 15% in the values of steamers, or as an alternative, an aggregate increase of 10% in the values and 5% in the rate of premium. If there was no increase in the value there should be an increase in the premium of 10%.

These increases apply to the hulls of any steamers, other

than recognized liners, a list of which has already been drawn up, and apply to all conditions of insurance, whether on institute clauses, F. P. A. absolutely free of damage, absolutely or excess of 3%. The only conditions excluded are those of total loss only, or total loss including salvage charges.

An important addition to the agreement is that a disbursement clause must be in all policies, limiting the amount of disbursements to 15% of the value of the hull.

Underwriters are also requiring institute clauses and warranties to be given unless the conditions on which steamers are insured are more favorable to them.

So far as British owners are concerned, and the agreement only affects steamers insured in London, no hardship is entailed. It will be generally conceded that the advance in the values of steam tonnage has been considerably more than 15% in the last two years. To provide for this increase owners have been accustomed to cover large amounts on "disbursements," the rates for which are fixed on the basis of total loss only. Naturally such a course is distinctly unfair to underwriters who have to pay claims for particular average, based on the proportion their line bears to the insured value of the steamer. By fixing the limit for disbursements at 15% of the value of the hull owners are automatically compelled to increase the hull insurance to its proper value if they wish to be fully covered.

#### INSURANCE ON TRAWLERS

The trawlers of the Canadian Fish & Cold Storage Co., Ltd., of Prince Rupert, are insured on a value of £7,300 each. The rate of premium is 8 guineas per cent, average to be payable if amounting to 1 per cent, and underwriters to pay 4-4ths R. D. C., as well as claims under protection and indemnity, excluding, of course, those under the Workmen's Compensation Act. The trawlers have been called the "G. E. Foster" (sailed Oct. 8), "Andrew Kelly" (sailed Oct. 8), and "James Caruthers." The voyage is from Grimsby to Prince Rupert, including a call at Vancouver.

#### SURVEYS OF PACIFIC MAIL VESSELS UNWARRANTED

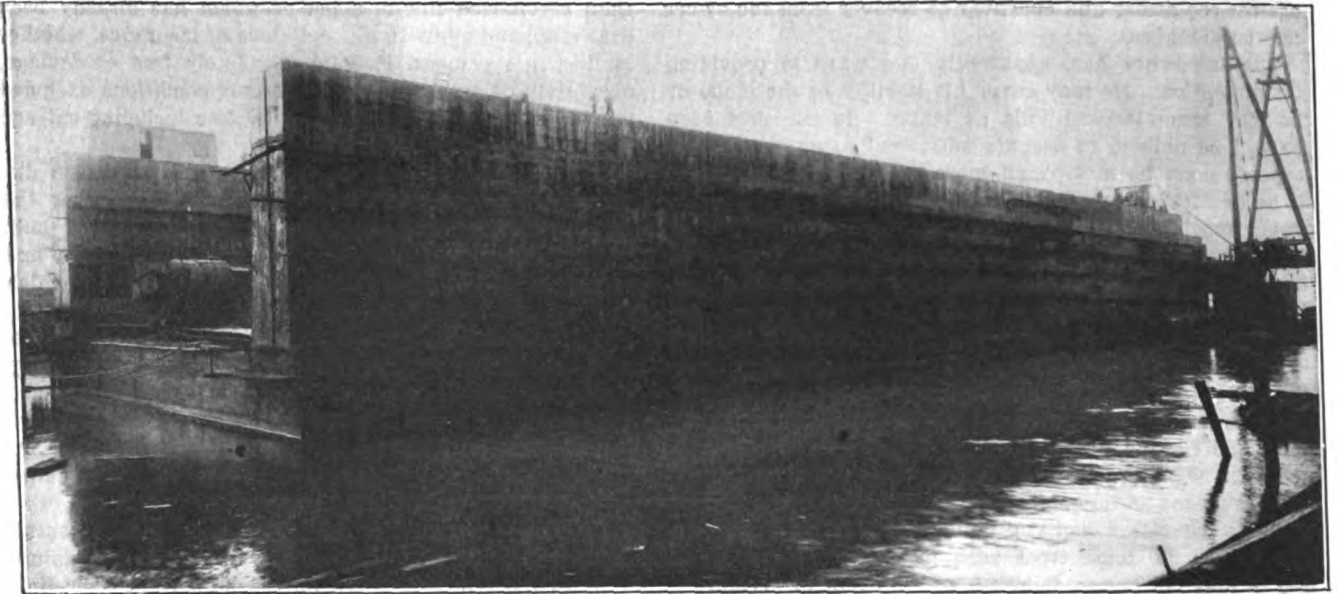
The action of the government at Washington in ordering, last month, the dry docking of the Pacific mail steamers "City of Panama," "San Juan," "San Jose" and "Acapulco" has caused considerable comment in the shipping papers throughout the country.

It appears that a passenger on the "City of Panama" reported to the Washington authorities that the steamer was unseaworthy, that he had not been treated well in many ways, and in fact that all of the steamers on the Panama run were unseaworthy and should be so declared. It does not appear that the inspection bureau at Washington asked for any information from the local inspectors but instructed them to have the steamers placed in dry dock and a thorough examination made.

This had been done in the case of two of the boats and a most rigid inspection failed to disclose any weakness or evidence of unseaworthiness. As the local inspectors are compelled to make periodical surveys and to withhold certificates if anything is wrong it seems strange that so much credence should be placed on the complaint of a passenger who has no means of knowing anything about that which he avers.

On November 11, 1912, the Interstate Commerce Commission "voted that shipments destined from points in the United States to Porto Rico, the Canal Zone, or the Philippine Islands are coastwise and not export shipments." Upon presentation of further information and for the purpose of further consideration of the subject, that ruling was rescinded, however, on November 21, 1912.





Floating Drydock for Plant of the Seattle Construction and Drydock Company.

Much interest is being centered by American and foreign shipping circles on the construction of the mammoth floating dry dock at the plant of the Seattle Construction and Dry Dock Company, which is now rapidly approaching completion. As heretofore announced in these columns, this dock will be the largest floating dry dock on the Pacific Coast. With this additional floating equipment, the local company will have attained the efficiency and capacity desired to be able to successfully meet all demands upon the shipping industry that are anticipated with the opening of the Panama Canal and the location at this port of the Pacific Terminals. The dock is now about 90% completed and is expected to be in commission by the beginning of the new year. Its dimensions are, length 468 feet, width over all 110 feet, width clear between towers 85 feet, lifting capacity 12,000 tons. The dock is of the modern self-docking type, equipped with six 17-inch centrifugal pumps driven by electric motors, and also with electric capstans.

The addition of this modern dock is but one unit in the plan for the enlargement and improvement of the plant of the Seattle Construction and Dry Dock Company, which was adopted some time ago. Other large improvements are now completed and the company is now fully equipped to build and fit out vessels of all types and sizes. Among the contracts now under way at the local yard are two submarine torpedo boats for the Chilean government, three submarine torpedo boats for the United States government, large steel sea-going suction dredge also for the United States government, steel passenger steamer for the Inland Navigation Company, to be called the "Tacoma," steel cargo steamer also for the Inland Navigation Company, to be named "Sockeye," and a large steel, ocean-going steam yacht for D. C. Jackling, a wealthy mining man of Salt Lake City. Considerable repair work has been under way during the past months and the outlook for new construction work is unusually promising. The company employs approximately 1,500 men at the present time.

## REGISTER AND DISPLACEMENT TONNAGE OF SHIPS PANAMA CANAL TOLLS

By Joseph R. Oldham, N. A.

**S**HIPS without tonnage measurement would be as anomalous as a sheet of music without bars, or the pages of a book without punctuation. The present register tonnage formulae however, has only existed as a statutory enactment since the year 1853, and its deduction clauses, bearing on the net register, have been amended and revised many times since that date. This feature of the merchant shipping act might still be improved to an unlimited degree, even to the point of extinction with general advantage, if authority could be obtained to formulate a new International Register tonnage law.

Imagine a special traveling trunk being made four and six-tenths feet in length, breadth and depth. Now, if these three dimensions be multiplied together, with the addition of a small fraction of an inch, the resultant will be 100, and that is the register tonnage unit all the world over. But that trunk, if immersed in salt water, would displace nearly three tons weight of such water. If it were filled with coal or grain, its weight would then be a little over two tons. From this it may be understood that a register ton does not represent dead-weight ability, nor yet does it stand for displacement tonnage. The earlier tonnage

laws, however, were computed on a dead-weight basis, and indeed, all the British ship tonnage acts since the year 1694—or two hundred and sixty-two years after the first tonnage law was passed—up to the year 1836, had been designed to approximate to dead-weight capability.

After experimenting on tonnage admeasurement laws between that date and the year 1854, it was agreed to substitute internal capacity for register tonnage measurements instead of dead-weight ability, and what is known as the Moorsom system was then adopted and accepted by all the nations. This, while a thoroughly scientific system of measurement, is very simple and easily computed, and so far as the gross register tonnage is concerned, the internal capacity of all vessels is accurately shown by the "new measurement." But when we come to compute the net register tonnage of steam vessels, or even of sailing ships belonging to France—the discrepancy between vessels of the same class, or even of the same displacement, is frequently extreme and inequitable in the highest degree. By the international tonnage law of 1894, the deduction from the gross register, may be in one case only 32 per cent., while in a vessel of the same external dimen-

sions and displacement, the deduction allowed by law for propelling space, may be anywhere from 50 to 75, or even as high as 100 per cent. Indeed I have known the deduction to be so large as to leave the vessel without any register tonnage.

This can be done by making the engine and boiler space very large, say equal to 57 per cent. of the gross register tonnage, while still leaving sufficient length of cargo holds in which to stow such cargoes as lead, copper or steel. In computing the net register tonnage by this clause of the admeasurement act, the law allows a deduction equal to the actual space occupied by the boilers and engines plus three-fourths of such space; consequently, under this section of the act, it is practicable to construct a steamer to carry, say five or fifteen thousand tons dead-weight, which shall have no register tonnage (though the latest British amendment, to become effective in 1914, limits the deduction for propelling space to 55 per cent. of the G. R. T.).

The word "tonnage" repeated so glibly in every seaport town, has a very vague and varied significance. This may be readily understood when it is recalled that there are



S. S. "Veritas"

240x40x24 feet depth of hold. Designed to carry 2,500 tons dead-weight of copper. Gross register 1,835 tons. Net register as per U. S. statute 0.5 tons.

not fewer than half a dozen tonnages applicable to every ship. These are gross register, net register, gross displacement—which is always quoted for war vessels. Then, net displacement, which means dead-weight ability. Then there is cargo space tonnage, usually taken as 40 cubic feet, but sometimes at 70 cubic feet to the gross ton. Two thousand pounds is commonly adopted when quoting the tonnage power in connection with the transportation of coal; while 2,240 pounds represents a ton weight of ore, and this ton is always quoted in foreign countries. This may tend to show that a steamer's carrying capacity can only be very approximately ascertained from the official, or net register tonnage.

As regards lake vessels, the small modern ore carrier "Theodore Wickwire Jr." has a register tonnage of 4,927, but she carries fully 10,000 gross tons dead-weight, while practically 11,700 tons at 40 cubic feet could be stowed in her holds. As a further proof that either the law or practice requires revision, I might point out that the "D. R. Hanna" is given a gross register of 7,023 tons, while the "D. O. Mills," which is fully two feet broader and apparently one foot deeper, is credited with only 6,598 tons G. R. or 425 tons less, though she is of fully 520 tons more displacement, and of quite similar lines. Ordinary foreign going cargo steamers are not considered efficient unless they carry fully two and a half times their net register tonnage in dead weight. In some cases the dead-weight ability, in gross tons, is more than three times the number of the net register tons.

In a recent nautical publication, in referring to the Merchant Marine of Japan, it was stated that "from a fleet of trading vessels aggregating 660,000 gross tons in 1903, their 'displacement' last year amounted to nearly 1,000,000 tons, an increase of something over 300,000 tons, or 50 per cent. advance."

The adoption of the word "displacement" there distorted the information to be conveyed, as it rendered the statement absolutely misleading. If the Japanese had 660,000 gross tons, that would represent 1,650,000 tons of displacement

in 1903, so by that their tonnage would seem to have fallen off. As a fact, however, the Japanese had 1,543,827 gross register tons, practically 3,860,000 tons displacement, four years ago. I have computed this on the conservative basis of two and a half tons of displacement to one register ton, as displacement is never printed in statistical tables of merchant ship tonnage. A war ship's tonnage, however, always means displacement tons of 35 cubic feet to the ton. This makes the battle cruiser, on a tonnage basis, apparently three times the size of a merchant ship of the same principal dimensions, but the cargo tonnage, which I propose for one new official tonnage, would equal only about two-thirds of the gross displacement. Much confusion in connection with tonnage statistics could be eliminated by doing away with the arbitrary and irregular deductions prescribed to compute the net tonnage and by making the gross, subject to deduction for crew space, the official register tonnage. This, however, would only lessen the discrepancy between the cargo capacity and the official tonnage of freight vessels, but as it would fairly represent the earning powers of purely passenger steamers, it would be a more equitable official tonnage than that now "deemed" so.

In the early days of steam propulsion there was good reason for reducing the register tonnage of steamers as they required nearly the whole of their cargo space to carry coal for a voyage across the ocean, and the cost of operation was very great; but in these days an economical "tramp" steamer can be operated as cheaply as a sailing vessel while she can do more than double the work, hence the elaborate system of net register tonnage, which is avowedly favorable to steamers, has become obsolete. Moreover, as the adoption of oil fuel is rapidly becoming more general, the large reduction allowed primarily on account of bunker space, and for the weight of coal carried, is hardly justifiable; and as the adoption of the internal combustion engine may entirely stop the production of marine steam boilers, as well as the marine steam engine—for propulsion at least—say, within a decade from the present date; the cargo displacement, and the internal capacity of the holds, would seem to be the logical basis upon which to compute the official tonnage measurement without ingenious or arbitrary deductions, which are allowed and then disallowed in the same act.

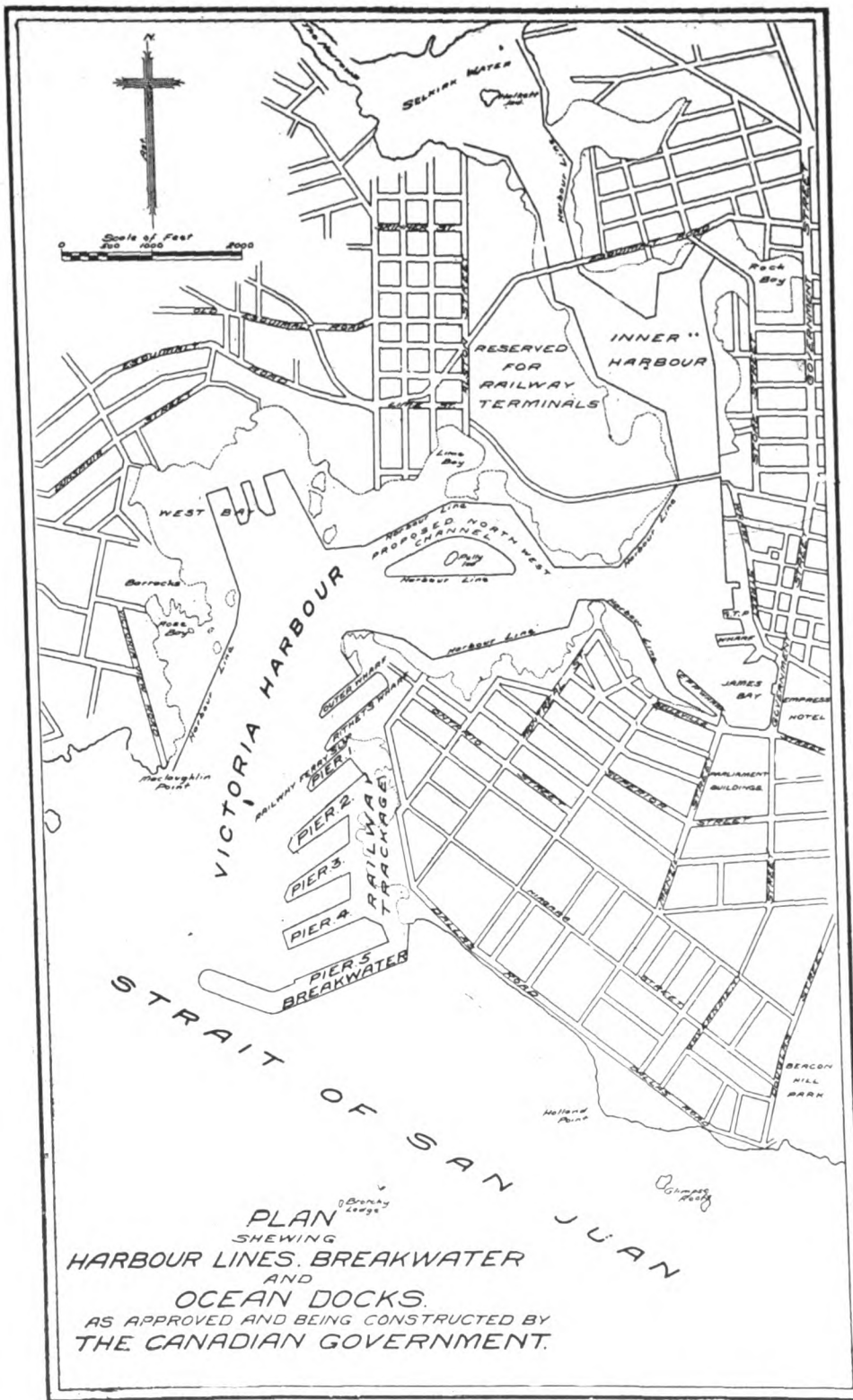
#### Panama Canal Tolls.

Since writing the above, the tonnage, rates or tolls, for the Panama Canal are published from which I quote the following: "On merchant vessels carrying passengers or cargo, \$1.20 per net vessel ton, each 100 cubic feet, of actual earning capacity," which must mean cargo capacity of holds. This assessment would prove most anomalous between the tea ship and the ore carrier. For example, the small ore carrier "Wickwire," which is of 4,678 "net vessels tons capacity," would escape with a toll of only \$5,613, while a fair toll would amount to \$12,240, as she can carry fully 10,200 tons D. W. at 20 feet draft water.

#### PORT IMPROVEMENTS AT VICTORIA, B. C.

The question of the immediate construction of additional wharf accommodation for ocean vessels at the port of Victoria has been referred to the government of Canada and it is considered highly probable that arrangements which will meet all demands will be made without delay.

The pilotage question is also under consideration at Ottawa but in consequence of the City's Parliamentary Representative having reached that City within the past few days there has not been time to hear what steps have been taken to meet the wishes of the Victoria, B. C., Board of Trade, who are advocating a reduction in the present pilotage dues.



#### CONTRACT FOR VICTORIA BREAKWATER

Much satisfaction is expressed in Victoria over the announcement that the Dominion government has awarded the contract for building the breakwater at that port, which is expected to greatly enlarge the harbor and shipping facilities. The tenders therefor were limited to Canadian and British firms. The successful bidder was Sir John Jackson (Ltd.), of England, whose tender was for \$1,800,000, which was \$700,000 under the next lowest offer.

The conditions of the contract are rather drastic and remarkable in many of the provisions. The work is to be completed in October, 1915. The breakwater is to be

erected at the outer harbor of Victoria, is to be 2,500 feet long, to extend from Ogden Point into 75 or 80 feet of water, and have a foundation of riprap, surmounted by a concrete wall, protected on the seaward side by concrete blocks. It is estimated that at least 365,000 yards of riprap will be required. A concrete wall is to be built the full length of the breakwater and there is to be a lighthouse at the farthest end of same.

The workmen must all be residents of Canada, unless Canadian labor is not available, and no workman is to be paid less than the following scale for an eight-hour day:

Foremen carpenters .....	\$4.75
Foremen mixing concrete .....	4.00
Foremen laying concrete .....	4.00
Foremen on stone crushers .....	4.00
Carpenters .....	4.25
Blacksmiths .....	4.00
Blacksmiths' helpers .....	3.25
Steam-derrick engineers .....	4.00
Steam-derrick firemen .....	3.00
Steam drillers .....	3.50
Hand drillers .....	3.00
Powder men .....	3.50
Quarrymen .....	3.00
Laborers .....	3.00
Diver, with outfit .....	15.00
Diver, without outfit .....	10.00
Driver, with one horse and cart .....	5.00
Driver, with two horses and wagon .....	7.00

The following minimum monthly rates of wages are to be paid, in addition to boarding men, as follows:

Tug captains .....	\$100
Tug engineers .....	90
Tug firemen .....	60
Deck hands .....	45
Scow men .....	45
Timekeepers .....	65

No portion is to be done by piece work. The contractors are also compelled to see to the proper sanitary accommodation and housing of all workmen employed.

#### IMPORTANT CHANGES IN AIDS TO NAVIGATION

Lights established: Key Reef, Clarence Strait, Alaska; Lone Tree Point, Point Helen, and Busby Island, Prince William Sound, Alaska; Goose Creek, Pamlico River, N. C.; Port Shoal, Courtney Point Shoal, Red Fish Point, Dyers Point Shoal, Little Oyster Bar, and Sulphur Point Shoal, St. Andrews Bay, Fla.

Lights changed from fixed to flashing or occulting: Channel Island, Orca Bay, Alaska (acetylene); Lincoln Rock, Clarence Strait, Alaska (acetylene); Superior Entry (2), Wis.; Point Judith Harbor of Refuge, R. I. (4 acetylene).

The name of Yerba Buena light station has been changed to Goat Island light station, Cal.

### PORTS OF LA GUAIRA, VENZUELA, AND MANZANILLO, MEXICO

The following information concerning the above named ports is of especial interest at this time as the opening date of the Panama Canal is rapidly approaching. It is our desire to publish from time to time similar statistics concerning the principal Pacific Mexican and South American ports.

We are indebted to La Corporacion Del Puerto De La Guaira and the Ferrocarriles Nacionales de Mexico, respectively, for the following:

#### Port of La Guaira, Venezuela.

Ship—	Net Tonnage	Arrival	Dep't'r.	Cargo
"Dageid" .....	788	Sept. 2	Sept. 5	1,270
"Philadelphia" .....	1,900	Sept. 6	Sept. 7	628
"Prins Mauritz" .....	1,328	Sept. 12	Sept. 12	201
"Zulla" .....	1,079	Sept. 12	Sept. 13	374
"Almerian" .....	1,910	Sept. 13	Sept. 13	204
"Patagonia" .....	1,903	Sept. 24	Sept. 25	549
"Prins Der Nederland" .....	1,203	Sept. 26	Sept. 26	317
"Maracaibo" .....	1,095	Sept. 27	Sept. 27	326
"Chancellor" .....	2,958	Oct. 5	Oct. 5	135
"Caracas" .....	1,850	Oct. 18	Oct. 19	940
Coal (patent fuel)—				
"Rossum" .....	814	May 20	June 1	1,716
Average working, 143 tons per day.				

#### Detentions and Working Expenses—Port of La Guaira, Venezuela

Port Facilities—Wharves and 3 jetties for foreign traffic, total length 1,600 feet. Ditto for coasting trade, 650 feet. Five warehouses for storage, total floor space 15,000 square feet. Average depth of water in harbor 20 feet; alongside jetties, 27 feet. Railway lines for conveyance of goods from ship's side to custom house.

Tonnage Dues—Two cents per ton on register tonnage. Two cents per kilo for discharging and loading.

Bill of Health—Cost about \$2, according to destination of ship. Certificate of having used rat guards costs \$1.

Pilotage—Cost \$16 inward or outward. Employment of pilot is optional.

Agent's Commission—Usually 2½ per cent on freight received. Five per cent on freight and passengers embarked.

Extra Workingmen—Thirty cents per hour. After 4 p. m. 40 cents per hour.

#### PORT OF MANZANILLO, MEXICO

Ship—	Tonnage	Arrival	Departure	Cargo.
"Hermionthis" .....	250	Jan. 1	Jan. 2	Merchandise
"Hongkong Maru" .....	200	Jan. 25	Jan. 27	" (Lighters)
"Jason" .....	250	Feb. 8	Feb. 9	Merchandise
"Tricolor" .....	504	Feb. 14	Feb. 15	Nitrate Soda
"Tampico" .....	2,678	Mar. 21	Mar. 24	Wheat
"Lonsdale" .....	750	Mar. 24	Mar. 25	Wheat
"Jason" .....	1,500	Mar. 30	Apr. 1	" & Mdse.
"Assuan" .....	602	Apr. 14	Apr. 15	" & Mdse.
"Cuzco" .....	558	May 5	May 6	Nitrate Soda
"Bekemham" .....	600	May 22	May 22	Wheat
"Kiyo Maru" .....	554	June 9	June 10	Nitrate Soda
"Jason" .....	325	July 1	July 3	Merchandise
"Buyo Maru" .....	654	July 29	July 31	Nitrate Soda

#### Detentions and Working Expenses—Port of Manzanillo

Port Facilities—Opening to port is very wide, about 2 kilometers. Plenty of water everywhere, except near shore line. Only obstruction in the harbor is the breakwater, which is naturally plainly visible. At night a red light is kept burning at end of same.

Delivery—Excepting coal and lumber, 500 tons can be discharged from any steamer, provided she has good winches. Machinery is also excepted.

Tonnage Dues—Six cents per ton gross. If Manzanillo is the second or subsequent national port, no tonnage dues are charged.

Bill of Health—\$1.00 Mexican bill of health; American bill of health \$5.00 Mexican currency. Other foreign bills of health, according to country to which vessel belongs.

Pilotage—\$1.75 per 305 millimeters (one foot), according to draft of the vessel.

Dockage—\$4.00 for docking to wharf and another \$4.00 for undocking.

Agent's Commission—\$50 all foreign vessels, excepting vessels coming from the Orient, for which \$75 is charged.

Extra Workingmen—Stevedoring is performed at 55 cents per metric ton. When vessel desires men on board, and stevedoring is not performed, following rates are charged: Laborers, 20 cents hour; water boys, 10 cents hour; foremen, 30 cents hour.

Above rates apply on day work. On Sundays, holy days and night work, 50 per cent more.

Vessel has to pay above rates, plus 20 per cent for supervision.

Sanitary Dues—On net tonnage of the vessel, 2 cents per ton. If Manzanillo is the second or subsequent national port at which the vessel has touched, then 1 cent per ton on net tonnage of the vessel will be charged.

#### STANDARD OIL COMPANY TO BUILD AT PORT TOWNSEND

The Standard Oil Company has recently awarded contracts for the construction of a distributing station for its products at Port Townsend. A concrete wall will be built around the plant and the foundations for the tanks will also be concrete. The company has decided to increase the capacity of the fuel oil tank to 27,000 barrels. It has also been concluded to extend the dock to the outer harbor line, where there is water enough to accommodate ocean-going steamers. The dock when completed will be 1,010 feet in length, in order that accommodations may be provided for the largest oil-burning steamers. Under the terms of the new contract construction work will start immediately.

#### FREIGHTS AND FIXTURES

We publish herewith the monthly freight report compiled for the Pacific Marine Review by Messrs. Hind-Rolph & Co.:

310 California St., San Francisco, Dec. 2, 1912.

Pacific Marine Review,

379-380 Arcade Annex, Seattle, Wash.

Dear Sirs:

The freight market for the past month has not shown any great change, there being a tendency on the part of both the ship owners and charterers to await developments. Rates have reached such a high level and charterers are naturally very cautious and do not seem disposed to take up tonnage at all unless with some definite object in view. The feeling of uncertainty with regard to the European situation has affected trade generally, which uncertainty has been felt on this Coast also. The following are the most interesting fixtures to record:

#### Sailers—

"Amazon," lumber, Chile or New Zealand.....	65s
"Ariel," lumber, Chile.....	65s
"Manila," lumber, Chile.....	65s
"Nokomis," lumber, Caleta Coloso.....	65s
"Taurus," lumber, Taltal.....	62s 6d
"H. K. Hall," lumber, Sydney, 61s 3d; Brisbane.....	66s 3d
"Commerce," lumber, Adelaide or Melbourne.....	73s 9d
"Viganella," lumber, South Africa.....	90s
"Claverdon," lumber, U. K.....	85s
"Jordanhill," lumber, U. K.....	85s
"Juteopolis," lumber, U. K., 1 port, 83s 9d; 2 ports.....	85s

#### Steamers—

"Clan McIver," time charter, delivery San Francisco, redelivery Japan.....	8s
"Rothley," time charter, delivery Puget Sound, redelivery Newcastle-Pirie .....	8s 9d
"Gifford," time charter, delivery San Francisco, redelivery Australia .....	8s 6d

Yours very truly,

HIND-ROLPH & CO.



### FLOUR SITUATION IN THE FAR EAST

Advices from Hongkong state that the lack of available tonnage and the consequent increased freight rates from the Pacific Coast are important features in the flour situation in the Far East, and there is no apparent likelihood that this condition will be changed for the next five or six months. For October and November deliveries, the rates have increased in some instances to \$5.50 gold currency per ton, and therefore the large dealers of flour are not purchasing except of certain brands which it is necessary to keep in stock. As a matter of fact the present supply in Hongkong and Shanghai, with the million bags en route, is sufficient to meet all demands for five or six months, and importers are not anxious to increase the supply, believing that in January or February shipowners will be willing to take a lower rate. To add to this unusual situation, the Japanese had bought up to early September something like 40,000 tons of wheat because of the very high price of rice, and Japanese bottoms alone are bringing out this wheat, thereby shutting out flour and other merchandise.

The price of flour on the Pacific Coast is comparatively low, yet it would be possible to compete with the heavy output of the Shanghai mills if the freight rates were more or less the same as last year. The fact that large consignments of flour from Shanghai are being shipped to Canton and other coast ports of South China was not altogether anticipated, but it is not expected that this will have any effect on prices of American flour for future delivery.

### TRANSPACIFIC NOTE

Practically all space on the regular line steamers to Oriental points is booked up until February and March of next year, and as outside disengaged tonnage is exceedingly scarce, exporters are forced to pass up many orders, although there is a good inquiry for flour from Shanghai and the Northern China ports, also wheat for Japan. There is also an accumulation of salt fish awaiting shipment, and the various transcontinental railroads have considerable quantities of cotton in storage. The regular line companies are pressing all possible tonnage into service to help meet the present situation.

### SALMON MARKET REPORT

The following report, under date of November 16, 1912, has been received from Messrs. Anderson & Coltman, Ltd., London, England:

"Our last report was dated October 19th, and since that date it has been difficult to get very much attention given to salmon or any other canned goods, as our trade have been occupied with dried fruit.

**Alaska Red.** 1-lb. talls have been sold at 25s spot, and bids have been invited down to 22s 9d for December shipment, without so far as we know getting any response from buyers.

**Alaska Medium Reds** are nominally worth 20s on the spot.

**Pinks.** There have been some sales at 10s per case on spot.

**British Columbia Sockeye.** 1-lb. flats maintain their value of 41s for good quality. There are still parcels of inferior quality being offered at less money, but buyers do not want these.

$\frac{1}{2}$ -lb. flats. Goods on the way have been sold at 43s, but the market is unsettled, and buyers are disinclined to do more than satisfy their actual requirements at present market rates.

**British Columbia Pinks.** The position remains unchanged, the dealers being sellers rather than buyers, and the stock consists principally of  $\frac{1}{2}$  flats, which are offered at from 23s upwards, according to quality. Buyers are not entertaining offers of goods to arrive.

**Cohoos.** Spot. Very little market."

### NEW SERVICE OF KOSMOS LINE

The Kosmos Line has inaugurated a through service from Mediterranean ports to San Francisco, Seattle and Tacoma at 84-day intervals. The first steamer in this service will be the "Sals," scheduled to sail from Genoa January 11, 1913. She will take cargo for San Francisco, Seattle and Tacoma without transshipment. The time en route from Genoa to San Francisco is approximately 85 days; to Seattle and Tacoma, 95 days.

The Kosmos Line also has a monthly sailing from Genoa to the west coast of Chile and Peru, cargo for North Pacific being transhipped to a through Hamburg-Antwerp North Pacific steamer at Valparaiso.

Commencing with the new 12,000-ton steamer "Karnak," leaving Hamburg about December 10, and Leith about December 20, this company will give a service at 84-day intervals from Hamburg, Leith and London to Honolulu, steamers proceeding from Honolulu to Puget Sound, taking general cargo to west coast of South America and Europe.

In addition to this extra service, the Kosmos Line has steamers sailing at four-week intervals from Hamburg and Antwerp to San Francisco, Seattle and Tacoma.

### JAPANESE STEAMSHIP LINE EXTENSIONS

Considerable interest is being manifested in shipping circles in the Far East over a new Japanese steamship line called the Nanyo Steamship Company, which will start within a short time running between Japanese ports and Java in direct competition with the strongly established Java-China-Japan line. The Java line has eight steamers at present, all of them modern and of good speed, with a total gross registered tonnage of 37,000, maintaining a fortnightly service between Java and Japan, while on the other hand the Japanese company will begin operations with only three boats with a total tonnage of 11,000. These steamers, it is understood, will receive a subsidy of 50,000 yen (\$25,000) per ship a year which is decidedly larger than the trade conditions would seemingly warrant as practically the only export to Japan from Java is sugar and the latter country buys little from its northern neighbor. There is, however, an indication that emigration to Java from Japan will be strongly encouraged, as there seems to be a lack of labor and no governmental restrictions at present to prevent an unlimited number to enter.

U. S. Vice Consul General A. E. Carleton, of Hongkong, advises that the sugar situation in Formosa may have had a considerable influence in starting the venture, as the crop for the present year is not normal, taken as a whole, and it has been stated that the cane has been attacked by a disease which will keep the production considerably below the usual output for the next four or five years. This forces the Japanese to look elsewhere for the raw product to equal the home demands. The Philippine sugar is finding a ready market in the United States and therefore is not available for exportation to Japan; this leaves the Java sugar practically without a competitor. The trade between the two countries does not seem to warrant two steamship companies competing, but it seems evident, from the reasons already indicated, that the Japanese line is entering into this trade for exploiting the emigration and because of the decrease in Formosa sugar. The freight rates will be maintained by the Java line if possible, although this depends on the action of the new company. The inauguration of this line has no special significance as far as the trans-Pacific traffic is concerned, as the trade between Java and the Pacific Coast is small and unimportant.

With the acquisition of another boat bought by the Nippon Yusen Kaisha there will be five steamers on the Japan-Calcutta service giving fortnightly sailings. The British India has been running for about a month a weekly service

between Calcutta and Japan and most of the boats are comparatively new, with excellent passenger accommodations. The new steamer of the Japanese company will be put on this run in a short time.

It is reported that the Nippon Yusen Kaisha is planning to make call at a Java port for its Australian line, thereby competing with three well-established companies in the Java-Australian trade.

## OSAKA SHOSEN KAISHA ISSUES REPORT FOR HALF YEAR, ENDING JUNE 30,

We publish herewith the balance sheet of the above semi-annual report:

Liabilities.	
Capital—660,000 shares of 25.00 yen each.....	Yen 16,500,000.00
Debentures .....	5,580,000.00
Insurance fund .....	1,309,913.00
Reserve fund .....	688,940.27
Repair fund .....	610,714.72
Sundry creditors .....	1,748,847.37
Amount brought forward from last term.....	1,101,860.63
Net profit .....	993,594.90
<b>Total .....</b>	<b>Yen 28,533,870.89</b>
Assets.	
Reduced book value of fleet.....	Yen 17,641,414.03
Launches, lighters, etc. ....	679,520.28
Land, buildings and furniture, etc.....	2,099,528.46
Investments .....	4,216,035.80
Coal and stores .....	239,631.93
Payments on account of new ships.....	356,843.44
Unexpired premiums .....	278,376.38
Loans and deposits .....	976,117.61
Sundry debtors .....	1,792,288.59
Cash in hand, at bankers.....	254,114.37
<b>Total .....</b>	<b>Yen 28,533,870.89</b>
Proposed Disposition of Profit.	
(As subsequently passed at shareholders' meeting.)	
Profit for this term .....	Yen 2,615,594.90
To insurance fund (slightly over 5% per annum on the reduced book value of fleet).....	452,000.00
To repair fund (slightly over 6% per annum on the reduced book value of fleet) .....	542,000.00
To depreciation of fleet (slightly over 5% per annum on the cost of fleet) .....	628,000.00
	1,622,000.00
Net profit .....	993,594.90
To reserve fund .....	50,000.00
To directors' and auditors' fees.....	50,000.00
	100,000.00
Balance .....	893,594.90
Amount brought forward from last term.....	1,101,860.63
	1,995,455.53
Dividends (8% per annum) .....	660,000.00
Amount carried forward to next term.....	Yen 1,335,455.53
TOKUGORO NAKAHASHI, President.	
SEIKI TERANISHI, Vice-President.	
ZENYEMON TOYODA,	
KEIJIRO HORI,	
JUNTARO YAMAOKA, Directors.	
RINZO TANARA,	
Duly audited and found correct,	
SHOTARO SUGIMURA,	
GYO NOMOTO,	
RYOTARO HANTA, Auditors.	
Osaka, July 4, 1912.	

### TRANS-PACIFIC SERVICE

The following extracts from "The Past and Present of the Osaka Shosen Kaisha," will be found of interest: "The Osaka Shosen Kaisha controls quite a network of steamship services, reaching every nook and corner of Oriental waters, and it would be impossible for anyone to travel to any extent in that part of the world without availing himself of one or other of the steamers flying the house flag of the firm of Osaka Shosen Kaisha. The improvement of the fleet, the increased attention given to the new line of the local service, etc., were pursued with such relentless zeal that at the close of 1906 there seemed to remain nothing but to start on the new enterprise, which had been, of course, the long-cherished plan of the present management.

Investigations were set on foot and vigorously carried out, as the result of which it was decided to inaugurate the trans-Pacific service, and the preparations with that end in view were pushed forward under the direction of competent officials.

At this stage, the largest of the company's steamers was "Shibetoro Maru" of 3,376 tons burden, but amongst the sea staff, there were old, well-trying captains valiant enough to steer into and buffet against the rough and angry weather of the winter Pacific with those small steamers. The ships were also sent out to Java, Rangoon and Calcutta, carrying young junior officers under command of veteran captains. The Japanese mariners are as steady, skillful and reliable as the first-class English captains, and the record of the Osaka Shosen Kaisha will prove this fact to the utmost.

While the personnel of the Osaka Shosen Kaisha was thus reinforced and trained for long distance voyaging, a ship building program was decided upon early in 1908 by the board of directors, and orders were placed with the Kawasaki Dockyards of Kobe, and with the Mitsubishi Dockyards of Nagasaki, to build six steamers of 12,000 tons displacement, of fifteen knots speed, to carry say 7,500 tons dead weight.

The steamers have been named "Tacoma Maru," "Seattle Maru," "Chicago Maru," "Panama Maru," "Mexico Maru" and "Canada Maru" in honor of the cities and countries with which the new enterprise will bear the closest relation, also special attention was given in selecting the names so that they might be easily remembered by travelers of all nationalities.

The finishing touch for the enterprise was to make arrangements for good railroad connections from the Pacific Coast to the eastern cities of the United States. This, however, was a very difficult undertaking, as the existing railroads had the partner steamship lines of their own, and a newcomer was naturally elbowed out from the field in spite of laborious efforts. It was very fortunate for the company that at this time the Chicago, Milwaukee & St. Paul Railway Company started their new extension from Morbridge to Tacoma and Seattle, covering a distance of more than 1,900 miles, which this company pushed forward in spite of the panic of 1907, and planned its completion early in 1909, the natural consequence being that this railway company was looking out for a good ocean connection to the Orient.

This singular chance brought the steamship and railroad companies together, and the contract for the interchange of the traffic was agreed to and signed by both the companies in April, 1908.

It may not be out of place to mention here that this Chicago, Milwaukee & St. Paul Railway Company has always been renowned for its excellent passenger train service which it has conducted between Chicago, Milwaukee and St. Paul.

It is hardly necessary to enlarge upon the convenience and facilities afforded to passengers, shippers and consignees traveling or sending cargo from the remotest corner of Korea or of China to the interior points of the United States or of Dominion of Canada, on one through ticket or bill of lading, operated by one railroad and one steamship company in comparison to the forwarding of parcels where it is necessary for half a dozen local steamers to hand them over from one to another, and so on, carrying charges unknown to the man at the point of origin.

Although the liners are not equipped with palatial luxury of the Atlantic greyhounds, yet they have, besides a few cabins of clean and neat finish, a spacious steerage quarters to accommodate over one hundred and fifty souls. These quarters being located amidships, the third-class passengers on the rough Pacific winter would enjoy to their heart's content easy and comfortable sea travels, quite free from usual unpleasantness of quarter deck steerage beset with pitchings at full swing and with boisterous sound of gloomy looking steering gears and of rapid-going propellers.

As to cargo working, special equipments were provided to hoist a 30-ton piece without much ado, also fitted up

with water tight compartment to stow silk and other valuable goods.

It is more than two years since the first steamer "Tacoma Maru" sailed from Hongkong on July 3, 1909, making a very profitable initial trip across to connect with C., M. & P. S. R. R. at Tacoma, which was opened up for freight service on July 1, 1909, and for through passenger service on August 1, 1910.

Until the end of 1909, the service was conducted under the law of encouragement of navigation and bounty was granted by the government.

In the spring of 1909 the Deep Sea Line Subsidy Act passed the house of diet and the company entered into mail and subsidy contract with the Imperial Japanese government in effect on and after January 1, 1910, which entitles this company an annual subsidy grant of over 1,200,000 yen.

By the reinforcement of the fleet as above named and the terms of the Deep Sea Line Subsidy contract, the service underwent an augmentation from monthly sailing from both termini to fortnightly and punctuality of the sailing time and date is kept up to the best advantage of the supporters.

Amongst some notable features worth mentioning it is to be noted that although steamers are not planned to

develop a high speed to rival the crack steamers, yet they make such quick passage across the Pacific that they infallibly arrive at Tacoma one or two days ahead of schedule date and the connecting railroads are, in turn, breaking record by rushing raw silk train from Tacoma to New York in a little more than four days' time.

Taking advantage of the gain in time by their quick passage Manila, Nagasaki and Victoria were added to the usual ports of call, that is, Shanghai, Keelung, Moji, Kobe, Yokkaichi, Shimidzu and Yokohama.

Also freight and passenger connections to all Pacific Coast points were established by special agreements with the Canadian and American coasting boats, and parcel connections are made with the firm of Wells Fargo & Co. of world wide renown.

As the general public must be well aware, this enterprise of the trans-Pacific line was started at the worst stage of Orient-America trade and many pessimistic views were talked about regarding the disastrous destiny of this venture, but fortunately by the valuable support of the shippers, the enterprise turned out to be a very promising one and the company is endeavoring by sheer dint of force to improve the management to vouchsafe the best service that we can work out to the esteemed supporters."

## CANADIAN PACIFIC RAILWAY COMPANY'S ANNUAL REPORT FOR YEAR ENDED JUNE 30, 1912

### To the Shareholders:—

The accounts of the company for the year ended June 30, 1912, show the following results:

Gross earnings .....	\$123,319,541.23
Working expenses .....	80,021,298.40

Net earnings .....	\$ 43,298,242.83
--------------------	------------------

Net earnings of steamships in excess of amount included in monthly reports.....	1,104,448.79
---	--------------

	\$44,402,691.62
Deduct fixed charges .....	10,524,937.49

Surplus .....	\$ 33,877,754.13
---------------	------------------

Deduct amount transferred to steamship replacement acct....	\$1,000,000.00
Contribution to pension fund....	125,000.00

1,125,000.00

\$ 32,752,754.13

From this there has been charged a half-yearly dividend on preference stock of 2 per cent., paid April 1, 1912.....

\$1,258,333.32

And three quarterly dividends on ordinary stock of 1¼ per cent. each, paid January 2, April 1, and June 1, 1912.....

9,450,000.00

\$ 10,708,333.32

\$ 22,044,420.81

From this there has been declared a second half-yearly dividend on preference stock,

And a fourth quarterly dividend payable October 1, 1912.....

\$1,333,901.94

on ordinary stock of 1¼ per cent., payable October 1, 1912

3,150,000.00

\$ 4,483,901.94

Leaving net surplus for the year.....

\$ 17,560,518.87

In addition to the above dividends on ordinary stock three per cent. was paid from special income.

The following are the details of special income for year ended June 30, 1912:

Balance at June 30, 1911.....	\$2,702,205.20
-------------------------------	----------------

Interest on cash proceeds and on deferred payments for land sold .....	1,817,774.37
--	--------------

Interest on deposits and loans .....	605,140.21
--------------------------------------	------------

Interest on Can. Pac. Ry. 1st mortgage bonds acquired .....	61,612.00
---	-----------

Interest from Minneapolis, St. Paul & Sault Ste. Marie Ry. bonds .....	159,720.00
--	------------

Interest from Duluth, South Shore & Atlantic Ry. bonds .....	100,000.00
--	------------

Interest from Mineral Range Ry. bonds.....	50,160.00
--	-----------

Interest from Toronto, Hamilton & Buffalo Ry. bonds .....	10,840.00
---	-----------

Interest from Kingston & Pembroke Ry. bonds .....	13,320.00
---	-----------

Interest from Dominion government bonds.....	182,500.00
--	------------

Interest from Ontario government bonds.....	48,000.00
---	-----------

Interest from British consols .....	114,569.44
-------------------------------------	------------

Interest from Montreal & Atlantic Ry. bonds, and on other securities .....	174,311.88
--	------------

Dividend on St. John Bridge & Ry. Extension Co. stock .....	50,000.00
---	-----------

Dividends on Dominion Express Co. stock.....	160,000.00
--	------------

Dividends on Minneapolis, St. Paul & S. S. M. Ry. common stock .....	890,645.00
--	------------

Dividends on Minneapolis, St. Paul & S. S. M. Ry. preferred stock .....	445,326.00
---	------------

Dividends on Alberta Ry. & Irrigation Co. stock .....	245,241.50
---	------------

Dividend on West Kootenay Power & Light Co. common stock .....	27,500.00
--	-----------

Dividends on West Kootenay Power & Light Co. preferred stock .....	1,925.00
--	----------

\$7,860,790.60

Less—Payments to shareholders in dividends:

September 30, 1911, January 2, 1912, April

1, 1912, and June 29, 1912.....

5,400,000.00

\$2,460,790.60

From this a dividend has been declared, payable October 1, 1912.....

1,350,000.00

Leaving net surplus carried forward.....

\$1,110,790.60

The working expenses for the year amounted to 64.89 per cent. of the gross earnings, and the net earnings to 35.11 per cent., as compared with 64.77 and 35.23 per cent., respectively, in 1911.

Four per cent. consolidated debenture stock to the amount of £2,252,516 was created and sold, and of the proceeds the sum of £1,481,592 was applied to the construction of authorized branch lines; £300,000 was used for acquisition of steamships for Pacific Coast service, as authorized; £5,000 was used to acquire a like amount of your company's first mortgage 5½% bonds; and the balance £465,924 was devoted to the acquisition of the bonds of other railway companies whose lines constitute a portion of your system, the interest on which had, with your sanction, been guaranteed by your company.

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Phone: Main 732

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SEATTLE, WASHINGTON

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**PUGET SOUND TUG BOAT CO.**  
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Pioneer, Lorne, Goliath and Ta-  
toosh.

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Tacoma, Prosper and Wyadda.

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White Pilot House and Stripe  
Around Hull, Black Funnel.

**AGENTS:** Pope & Talbot, San  
Francisco, Cal.; H. T. Hayden,  
Port Townsend, Wash.; W.  
Frank Andrews, Tacoma, Wash.;  
Victoria & Vancouver Stevedor-  
ing Co., Victoria and Vancouver,  
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Bros., Glasgow, Scotland.

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**Best Wheel Propeller Made**

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# **BUXBAUM & COOLEY**

*Marine Electrical Engineers  
and Manufacturers*

**STURTEVANT SETS INSTALLED**

S. S. Chippewa ..... 25 K. W., Seattle  
S. S. Alki ..... 15 K. W., Seattle  
S. S. Yakon ..... 10 K. W., Seattle  
S. S. Sioux ..... 10 K. W., Seattle  
S. S. Sol Duc ..... 30 K. W., Seattle  
S. S. Kennedy ..... 05 K. W., Seattle  
Tug Tatoosh ..... 05 K. W., Astoria

Fishboat Star ..... 7½ K. W., Seattle  
Ingersol Iron Works, 10 K. W., Alaska  
Talbot Boiler Co. .... 7½ K. W., Seattle  
Fireboat Duwamish ..... 5 K. W. Turbine  
Colman Crescents Co. .... 3 K. W. Tur-  
bine, 220 Volts.

Tug Pioneer ..... 05 K. W., Seattle

68 COLUMBIA STREET

SEATTLE, WASH.

are that we have the largest corn crop ever raised in the United States, and enormous crops of spring wheat, oats, rye, barley and potatoes have been harvested. The whole grain yield will be more than 13 per cent. above the high record crops of 1906, and the export demand will undoubtedly be very heavy, all of which conditions make for an active retail trade and wide-spread prosperity.

The election had very little influence upon business conditions and while there has been a great deal of talk about the possible unsettlement which might result from tariff revision, the fact is that scarcely any interference of that sort has been reflected. One reason for this is that many of the largest industrial corporations have so arranged their affairs as to make it possible for them to do a profitable business on the basis of much lower tariff schedules than those now in force. This preliminary arrangement is natural for the reason that there has been almost constant discussion for a year or more respecting the advisability of reducing the present duties.

There is likely to be other important legislation taken up at the extra session of the Congress, but whether or not an attempt will be made to amend the banking laws must depend very largely upon the attitude of President-elect Wilson. Action in that direction is most important, and since it will be difficult work under any conditions to place a new currency law upon the statute books it might be well to get a bill before the people with the least possible delay. The public has been awakened to an appreciation of the importance of the subject, so that there could not be a better opportunity for the Congress to serve the country effectively in this direction.

Advises received by this bank from leaders in various industries show that general business in many sections is better today than it has been at any time this year. This applies not only to the steel and iron industry, where the volume of orders is almost unprecedented, but to trade conditions as a whole. The railroads are handling an enormous amount of traffic, and the indications are that their present equipment will be taxed to handle the rush orders from merchants who are finding it necessary to restock their shelves on a very large scale. It is evident also that most of this merchandise will be required for

immediate use. This is especially true in the farming communities of the west where an immense business is being done by the country stores as a result of the marketing of the bountiful crops. The spending power of many communities is today three or four times as great as it was a year ago.

While there are demands for increased wages, there is less unrest among the laboring classes than there has been for quite a period. The admirable report just handed down by the board of arbitration with respect to the claims made by locomotive engineers for increased wages shows that it is perfectly possible for such questions to be arbitrated satisfactorily to both capital and labor. The compromise arrangement therein proposed, with the noteworthy suggestion concerning future provision for the organization of special commissions to pass upon wage questions, makes that document an important contribution to the literature of wage agreements.

It is fair to assume that early next year it may be a relatively easy matter for many railroads to sell new stock and bond issues because of the remarkable prosperity they are now enjoying. A large amount of such financing has been held back pending more settled conditions in the investment market but there is reason to believe that the demand for such securities will broaden materially with the returning flow of money to the eastern reserve centers during the next month or two. Besides this, it is also reasonable to expect that there will be a better demand for American securities in Europe as soon as the war excitement ends. The fact is that Europe is ordinarily a heavy buyer of our bonds and stocks, and as it has remained out of our market for so long owing to unsettled conditions, it is within reason to suppose that there will be a decidedly broader inquiry in the near future from foreign markets. One of the most interesting questions connected with these flotations will be the probable investment basis at which the new securities can be sold. It appears to be impossible to sell high grade bonds on the old 4 per cent. basis because of the world-wide tendency toward higher interest rates. There seems to be no doubt, however, that there will be a ready demand next year for bonds paying something around 4½ or 5 per cent. In



this connection it is well to remember that within the last few months there have been relatively small offerings of these securities because the great banking houses of the United States and Europe have not cared to force their offerings to a point where congestion might develop. The bond market in this respect is therefore in a very good position today, as there are no enormous holdings of unsold securities in the hands of underwriting syndicates such as has often been the case.

It is probable that the surplus funds available for investment after the January first disbursements are made will

be unusually large. As a matter of fact, there has been a considerable surplus overhanging the market since the last semi-annual dividend payments were made, and with the return flow of money from the harvesting sections there ought to be a sufficient reduction in rates during January and February to make the new bond issues look attractive from an investment standpoint.

THE FOURTH NATIONAL BANK  
of the City of New York.

New York, December, 1912.

## AIDS TO NAVIGATION IN BRITISH COLUMBIA WATERS

Wm. P. Anderson, chief engineer of the Department of Marine and Fisheries, Ottawa, Canada, reports that instructions have been given to paint the body of all beacons in British Columbia waters which stand against a dark background white instead of red or black, because Mr. Anderson found, during a late inspection, that where these beacons stand they are usually overshadowed by the mountains, and in dark colors are absolutely invisible even at short distances in daytime, whereas painted white they can be seen for miles.

For this reason the following beacons will be painted white as occasion offers:

Pointer Island, Mark Tree, Koya Point, Jorkins Bluff, Zero Rocks, Maude Island, Sechelt, Helen Point, Lookout Island, Coast Island, Watson Rock, Leare Island (to be discontinued), Boat Bluff, Crane Island, Gilliard Island, Comox Spit, Mary Ann Point, Kidley Island, Connis Rock, Klew-nugget, Fog Rocks, Helmoken Island, Ragged Island, Dodds Narrows, Dock Island.

No orders have been given to change the color of the buoys; they will continue to be red and black as heretofore. There are a few buoys on Kootenay lake which have been for many years painted white because the color could be more easily picked up by the searchlights of the steamers navigating the lake.

Mr. Anderson states that he is not sure that it would not be an improvement if the black buoys were painted white. On the Trent canal system the canal authorities have painted their port buoys white, and they are very much more prominent at night than the red buoys.

The following list shows the Aids to Navigation and Life Saving Appliances established on the West Coast of Vancouver Island since the wreck of the "Valencia," some seven years ago:

1. A light station of the third order has been established at Sheringham Point this year, 1912.
2. The lighting apparatus at Carmanah replaced by a more powerful apparatus in 1908.
3. The steam fog horn at Carmanah replaced by a more powerful diaphone alarm in 1908.
4. A gas lighted and whistling buoy was established at the entrance to Port San Juan in 1907.
5. A gas and whistling buoy was maintained from 1907 to 1909 on Swiftsure Bank when it was replaced by a steam lightship maintained by the United States Government.
6. A light of the 1st order was established at Pachena Point in 1908.
7. A diaphone fog horn established at Pachena Point in 1908.
8. A wireless station established at Pachena Point in 1908.
9. A diaphone fog horn established at Cape Reale in 1908.
10. A small unwatched light was established at Amphitrite Point in 1905.
11. A 1st order light station was established at Estevan Point in 1910.

12. A diaphone fog horn was established at Estevan Point in 1907.

13. A wireless station established at Estevan Point in 1907.

14. A light station of the 4th order was established at Nootka in 1911.

15. A combined gas and whistling buoy was established at Kyuquot in 1907.

16. An unwatched acetylene light was established at Lookout Island in 1907.

17. A light station of the 5th order established at Quatsino in 1909.

18. A wireless station was established on Triangle Island in 1910.

19. A life saving station was established at Bamfield Creek in 1907, where a motor self-righting and self-bailing lifeboat is kept in service the whole year.

21. A life saving station was established at Ucluelet in 1907 where an oar-propelled, self-bailing and self-righting boat is in service with a crew of twelve men from the 15th of October to the 31st of March, each year.

21. A life saving station was established at Clayoquot in 1907, where an oar-propelled, self-righting and self-bailing boat is in service with a crew of twelve men from the 15th of October to the 31st of March, each year.

22. A life saving road skirting the coast from Banfield Creek to Carmanah Point has been built from Banfield Creek for 16 miles as a wagon road, and for the balance, of approximately 16 miles, as a foot trail.

23. Five shelter huts have been established between Nootka and Quatsino where a supply of food has been left, with stove and firewood and directions for getting to the nearest settlement. These directions are printed in German, French and English.

24. Lookout stations are maintained at Ucluelet and Tsusiat during the winter months and at each of these places a watch is kept night and day to give early warning in case of shipwreck.

### MOTOR BARGE

Of late a good deal of attention has been paid to the question of installing motors in barges for inland navigation in England, and the United Alkali Company, Ltd., who are large users of barges, decided to try a Thornycroft set. The boat in which this is fitted, the "E. K. Muspratt," is a ketch 84 feet long and 21 feet 6 inches in beam, with a cargo-carrying capacity of 200 tons, and is now engaged in trading on the Mersey and various ports around the Lancashire coast. The engine has four cylinders, 6-inch bore by 8-inch stroke, driving a propeller at 350 revolutions per minute, and is placed aft of the cargo hold, so that the cargo capacity is not affected. The fuel is paraffin and the controls are worked from the deck. On a run of over 400 miles the average fuel consumption proved to be 0.47 pint per brake horse power per hour. The longest continuous run the vessel has yet made was of approximately 12 hours' duration, and with a cargo of 163 tons she attained a speed of 7½ knots with the tide. On her trials a mean speed of 5½ knots was obtained.

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About every paint manufacturer in this country at some time has made and put on the market a Copper paint, but so far practically all, or nearly all of them, without any satisfactory results, and WOOLSEY'S COPPER "BEST" Paint continues to take the lead. It does just what the manufacturers claim for it and the price is kept at a minimum in comparison with cost.

Woolsey's Copper Paints are sold at a lower price on the Pacific coast than in any other place in the world, for the reason that we have no traveling men to pay in that territory and the amount saved in this way is deducted from our selling price and the consumers get the benefit.

With these facts in view, there should be no inducement for vessel owners to experiment with unknown compounds and taking a chance of having their vessel's bottoms eaten and destroyed by the Tereido worm and coated with barnacles, sea grass, etc.

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**Lick Observatory**—One of the Points of Interest Along the Route of the O.-W. R. & N. and Southern Pacific California Excursion

Under the management of the Oregon-Washington Railroad & Navigation Co. and the Southern Pacific, the Fifth Annual Puget Sound special train excursion will leave Seattle and Tacoma on January 22nd for California, with Los Angeles as its destination. It is to be a solid train of Pullman sleeping cars, elegantly equipped, in which the tourists can make their home uninterrupted until the excursion ends. But more than this, the excursion is to be so organized by the railroad that when the ticket is purchased it will include the berth, meals, side trips and entertainment during the entire going trip. Thus, every detail that usually worries the traveler is dispelled and the mind is open to take in the sunshine and fun along the way. Not the least pleasure will be the many side trips arranged at various stops, at which times many of the famous and most attractive places in California will be visited. The scenery along the "Route of the Shasta Limited" is of the very finest in America. It is called "The Road of a Thousand Wonders," and rightly named. Leaving Washington and Portland, the route goes through the Willamette and Rogue River Valleys, across the Siskiyou, to Mt. Shasta and Shasta Springs, then into the real California where the palm and olive abound and flowers begin to greet the traveler. Through the Sacramento Valley, then to San Francisco, that city of wonders; then Oakland, Berkeley, the wondrous; Santa Clara Valley; the Garden

City of San Jose; Santa Cruz and the sea and the big trees; Monterey, historic and quaint, where stands the famous Hotel Del Monte by the edge of the sea. Other places that will be seen are Paso Robles, Santa Barbara, Los Angeles, the excursion's destination, with side trips to Pasadena, Catalina Island, Coronado, Riverside and Redlands. And everywhere a cordial welcome awaits the citizens of Washington, for these excursions have done much toward uniting the north and south Pacific coast in the bonds of a common interest.

### TORPEDO BOAT DESTROYER "AYLWIN" LAUNCHED

The United States torpedo boat destroyer No. 47 "Aylwin" slid down the ways at Cramp's shipyard on Saturday, November 23rd, at 12:45 o'clock.

The "Aylwin" is built of the lightest and highest grade of steel, and calls for a speed of 29½ knots per hour. The armament consists of four 4-inch guns, four 45-centimetre deck torpedo tubes. Length between perpendiculars, 300 feet; breadth, moulded, 30 feet 6 inches; draft, about 9 feet 3 inches, and trial displacement, 1,042 tons.

The launching was accomplished without a hitch. A large number of government officials were in the launching party. The "Aylwin" is named for John Aylwin, a lieutenant of the navy, who served aboard the old frigate "Constitution," and who was killed in the war of 1812.

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**PORT WARDEN'S REPORT FOR PORT OF SEATTLE,  
MONTH OF NOVEMBER, 1912**

Deep Sea Vessels—Arrivals 156, tonnage 320,153; departures 153, tonnage 302,001.

Passengers—Inbound, 127,314; outbound, 127,477.

**Imports**

<b>Domestic—</b>	
From Pacific Coast points.....	\$ 679,096
From Alaska points.....	1,089,540
From the Philippines.....	107,739
From the Hawaiian Islands.....	29,286
From New York.....	3,268
From Pacific Ocean.....	64,965

Total value domestic imports.....\$3,090,823

**Foreign—**

From British Columbia.....	\$ 70,167
From Germany.....	7,116
From France.....	7,108
From Scotland.....	967
From Ireland.....	1,237
From England.....	24,914
From Italy.....	19,250
From Norway.....	8,622
From the Orient.....	1,178,548

Total value foreign imports.....\$1,317,929

**Exports**

<b>Domestic—</b>	
Shipped to Coastwise points.....	\$ 747,729
To the Philippines.....	268,770
To the Hawaiian Islands.....	68,247
To local points.....	352,185
To New York.....	455,108

Total value domestic exports.....\$2,017,311

**Foreign—**

To British Columbia.....	\$ 368,954
To the Orient.....	362,675
To England.....	391,397
To Germany.....	17,080
To South America.....	126,428

Total value foreign imports.....\$1,266,534

**COASTWISE AND FOREIGN COMMERCE OF TACOMA,  
WASH., MONTH OF OCTOBER, 1912**
**Principal Foreign Shipments.**

Articles—	Quantity.	Value.
Flour.....bbls.	141,921	\$ 584,962
Wheat.....bu.	952,671	767,715
Cotton, raw.....bales	6,067	355,140
Coal, bulk.....tons	8,457	34,392
Machinery.....pkgs.	349	23,064
Lumber.....feet	1,948,335	40,879
Milk, condensed.....cases	7,850	26,335
Paraffin wax.....boxes	5,790	19,516
Sewing machines.....pkgs.	9,740	96,612
Automobiles.....	41	43,179
Copper.....bars	7,345	67,267
Miscellaneous to British Columbia.....		47,314
Miscellaneous to Japan, China, Manila, So. America and Europe.....		394,259

Total foreign shipments.....\$2,631,659

**Principal Coastwise Shipments.**

Articles—	Quantity.	Value.
Flour.....bbls.	21,306	\$ 88,427
Lumber.....feet	4,406,616	60,092
Coal.....tons	15,263	68,683
Wheat.....bu.	232,593	179,900
Barley.....bu.	42,378	19,327
Furnace products.....		64,064
Box shooks.....bdls.	6,369	2,765
Feed.....tons	6,570	117,555
Shingles.....bdls.	10,925	5,572
Shoes.....cases	24	1,554
Miscellaneous to Alaska.....		42,163
Mis. to Cal., Honolulu and N. Y.....		130,141
Horses.....	74	12,950

Total coastwise shipments.....\$820,798

Grand Total exports for 1912.....\$30,681,800

**Coastwise Receipts.**

Alaska.....	\$ 294,790
California.....	494,928

New York.....22,900

Total coastwise receipts.....\$ 812,618

**Foreign Receipts.**

British Columbia.....	\$ 201,981
China and Japan.....	2,101,903
Europe.....	17,000
South America.....	155,150

Total foreign receipts.....\$ 2,436,034

Grand total receipts for 1912.....\$25,159,149

**Shipping Record.**

	October 1912	October 1911
Deep sea arrivals.....number	146	95
Deep sea departures.....number	137	107
Inward reg'd. tonnage.....tons	285,102	182,830

**OFFICIAL STATEMENT OF THE CUSTOMS BUSINESS  
OF THE DISTRICT OF LOS ANGELES, CAL., DURING  
THE MONTH OF OCTOBER, 1912**

Collections.	Imports.	Exports.
\$93,175.43	\$301,520	\$65,766

**Principal Imports and Exports by Countries.**

	Imports.	Exports.
Belgium.....	\$ 5,596	
France.....	19,462	
Germany.....	80,472	\$ 2,310
Italy.....	12,251	
Switzerland.....	4,817	
England.....	41,484	27,314
Scotland.....	9,004	
Ireland.....	4,001	
Canada.....	13,799	30,501
Guatemala.....	1,218	
Mexico.....	5,998	
Cuba.....	4,454	
Brazil.....	24,567	
Ecuador.....	2,898	
China.....	2,572	
Japan.....	39,892	4,461
Philippine Islands.....	1,950	
Australia.....		1,180
Other countries.....	26,965	
Total.....	\$301,520	\$65,766

**Principal Imports.**

Coffee, 190,676 pounds.....	\$ 29,174
Seeds.....	20,685
Tea, 83,738 pounds.....	20,350
Earthenware.....	16,518
Toys.....	14,155
Wines and liquors, 10,720 gallons.....	12,797
All other articles.....	187,841
Total.....	\$301,520
Dutiable.....	\$196,655
Free of duty.....	104,865

Total.....\$301,520

**Exports to Non-Contiguous Territory of United States.**

Hawaii—		
Crude oil.....	672,000 gals.	\$12,800
Distillates.....	537,800 gals.	58,480
Totals.....	1,209,800 gals.	\$71,280

**TONNAGE MOVEMENT PORT OF SAN FRANCISCO  
FOR MONTH OF NOVEMBER, 1912**

Compiled by San Francisco Chamber of Commerce.

	Arrivals.		Departures.	
	Tons.	Tons.	Tons.	Tons.
Coast.....	365,481	34,300	360,368	36,533
British Columbia.....	23,533		18,323	
Belgium.....	11,441			
Hawaiian Islands.....	29,319	1,505	32,147	1,425
Hongkong.....	25,916		31,096	
Alaska.....	425	496		328
Great Britain.....			11,263	1,868
Europe.....			7,475	
Germany.....	3,010		8,628	
China.....	9,190			
Chile.....	7,654		7,253	
Japan.....	27,713		11,897	
Philippine Islands.....	7,233			
Australia.....	10,785	4,072	16,680	
Panama.....	8,931		6,922	

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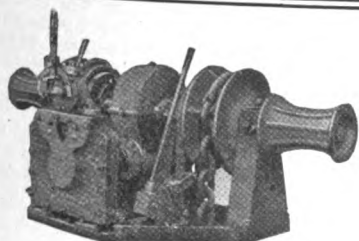
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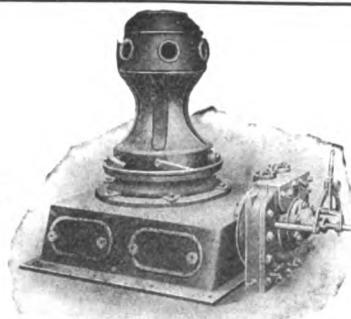
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Mexico .....	11,045	25,662
Peru .....	7,131	2,566
Eastern ports .....	4,218	

## Receipts of Lumber—Month of November, 1912.

From—	
Coast .....	\$29,622
Interior .....	2,200
Oregon and Washington .....	51,994

## Shipments of Lumber—Month of November, 1912.

To—	
Foreign ports .....	1,607
Hawaiian Islands .....	147

## Receipts of Grain—Month of November, 1912.

	Flour	Wheat	Barley	Oats	Corn
	Q. sx.	Ctls.	Ctls.	Ctls.	Ctls.
Interior .....	\$111,350	\$ 37,428	\$497,769	\$19,240	\$8,038
Coast .....			15,871	8,780	
Ore. & Wash. ....	359,105	471,373	89,134	39,872	

## Shipments from San Francisco—Month of November, 1912.

Flour, lbs. ....	25,592
Corn, ctls. ....	645
Wheat, ctls. ....	241
Barley, ctls. ....	400,158
Oats, ctls. ....	4,650
Beans, ctls. ....	3,566

## COMMERCIAL MOVEMENTS AT PORTLAND, ORE.

Compiled by Portland Chamber of Commerce.

## Lumber Exports from Portland.

November Since January 1, 1912

Feet	Value	Feet	Value
12,937,827 .....	\$152,967	100,949,473 .....	\$1,115,922
(Domestic)			
15,926,200 .....	\$167,225	157,448,257 .....	\$1,656,716

## Wheat Exports from Portland.

Bushels	Value	Bushels	Value
642,935 .....	\$537,728	5,768,126 .....	\$4,971,260
(Domestic)			
547,861 .....	\$441,028	4,269,581 .....	\$3,730,196

## Flour Exports from Portland.

Barrels	Value	Barrels	Value
60,750 .....	\$243,000	641,426 .....	\$2,560,623
(Domestic)			
35,735 .....	\$139,374	340,533 .....	\$1,437,657

## Barley Exports from Portland.

Bushels	Value	Bushels	Value
619,928 .....	\$461,182	1,003,812 .....	\$756,642
(Domestic)			
110,417 .....	\$ 69,563	222,596 .....	\$143,601

## Tonnage Entered at Portland.

November, 1912 .....	84 vessels .....	109,342 tons
November, 1911 .....	78 vessels .....	102,292 tons

## Tonnage Cleared from Portland.

November, 1912 .....	83 vessels .....	116,480 tons
November, 1911 .....	76 vessels .....	100,617 tons

## Principal Foreign Imports at Portland.

	November	Since Jan. 1, 1912
Cement, barrels .....		12,600
Coal, tons .....		7,263
Coffee, sacks .....	1,866	8,742
Curios and merchandise, packages .....	510	21,702
Hardwood, feet .....		5,920,348
Hemp, bales .....		8,817
Iron, packages .....		6,467
Peanuts, bags .....		10,382
Provisions, packages .....	640	13,099
Rice, bags .....		9,174
Sugar, bags .....		715
Sulphur, tons .....		6,217
Tapioca, bags .....		1,720

## Principal Domestic Imports at Portland by Water.

Asphaltum, barrels .....	6,036	91,269
Canned goods cases .....	45,609	180,742
Cement, sacks .....	317,543	3,064,801
Electrical goods, packages .....	1,323	14,133
Hardware, tons .....	1,497	19,465
Iron, packages .....	7,290	97,625
Machinery, packages .....	258	3,625
Merchandise, tons .....	2,739	34,436
Miscellaneous, packages .....	23,242	379,908
Oil, barrels .....	406,466	4,139,909
Paints and oils, packages .....	3,925	71,798
Plaster, sacks .....	7,039	107,190

Rice, sacks .....		1,841
Salmon, cases .....	2,010	79,308
Salt, sacks .....	16,408	270,889
Sugar, sacks .....	31,379	459,410
Sulphur, sacks .....	2,910	20,289
Tobacco, packages .....	1,713	14,540

## COMMERCE VIA PANAMA AND TEHUANTEPEC

Commerce between the eastern and western coasts of the United States by way of the Isthmuses of Panama and Tehuantepec shows a remarkable growth in recent years. Figures recently compiled by the Bureau of Foreign and Domestic Commerce of the Department of Commerce and Labor show that this traffic has trebled in value in the last four years. Prior to 1907 all merchandise passing between the eastern and western coasts of the United States by way of the isthmus utilized the Panama railway. At the beginning of 1907, however, a railway line 190 miles in length was opened across the Isthmus of Tehuantepec in southern Mexico, constructed with special facilities for transferring merchandise from vessel to railway and railway to vessel, and since that date this traffic, on both the Panama and Tehuantepec railway lines, has grown very rapidly and amounted in the fiscal year 1912 to \$125,000,000 in value, against \$36,000,000 in 1908. These figures, which include only domestic merchandise passing by way of the isthmus between the eastern and western coasts of the United States (including, however, Porto Rico as among the eastern and Hawaii among the west ports), suggest that a still greater growth in this traffic between the eastern and western coasts is likely to develop with the opening of the Panama Canal.

The chief growth in this coast-to-coast traffic by way of the isthmus has developed, as above indicated, since the opening of the Tehuantepec railway. The total value of shipments from the Atlantic Coast ports to the Pacific Coast ports in the year ended June 30, 1908, the first fiscal year including a full year's operation of the Tehuantepec road, was \$15,750,000, of which over \$13,000,000 passed by way of the Tehuantepec road. By 1912 the total had grown to \$69,500,000, of which a little over \$55,000,000 was by way of Tehuantepec.

The value of merchandise passing from Pacific Coast ports to Atlantic Coast ports by way of the isthmuses was, in the fiscal year 1908, \$19,750,000, of which about \$18,330,000 passed by way of the Tehuantepec road. In the fiscal year 1912 this total had grown to practically \$55,000,000, of which a little less than \$45,000,000 crossed by the Tehuantepec line.

Practically all of the sugar sent from Hawaii to the eastern coast of the United States goes by way of Tehuantepec and forms considerably more than one-half of the eastward movement of domestic merchandise from the Pacific to the Atlantic Coast by way of the Tehuantepec road; while merchandise from the eastern coast bound for the Hawaiian Islands forms approximately 10 per cent of the westward movement of domestic merchandise across the Tehuantepec road.

The character of articles forming this large traffic between the eastern and western coasts by way of the isthmuses of Tehuantepec and Panama is shown by a table issued by the Division of Statistics of the Bureau of Foreign and Domestic Commerce. This table shows that of the \$12,250,000 worth of merchandise passing from the Atlantic Coast to the Pacific ports of the United States in July and August, 1912, iron and steel manufactures amounted to over \$3,000,000; cotton manufactures to nearly \$2,000,000, and the remainder miscellaneous articles in large variety, chiefly manufactures. The merchandise from the Pacific Coast destined to the Atlantic ports includes, as above indicated, sugar from the Hawaiian Islands, forming about one-half of the total of \$8,000,000 during the two months ended August 31, 1912; the remainder being chiefly fruits, canned vegetables, canned salmon, wool, copper, ore and wines.

## PROCEEDINGS OF THE KOBE FOREIGN BOARD OF TRADE FOR THE YEAR 1911.

The general annual meeting of the Kobe Foreign Board of Trade was held on the 8th of March, 1912, and the following extracts from the annual report of this Board will prove of interest to all those who are watching the commercial progress of Japan.—Ed. Note.

After referring to the fact that imports into Kobe last year showed an increase of 26,000,000 odd yen, and exports a decrease of 1,500,000 yen, the net increase of for-

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Gentlemen:

1. Replying to your letter of August 26th, 1912, you are informed that the welded stern post of the steamer "Gen. Nathaniel Greene," which you repaired for this department at New London, Conn., in 1907, is still in service on that vessel and giving satisfactory results.

2. It is general policy of this department to not permit the publishing of any official reports upon commercial products or processes, but in this particular case there would appear to be no objection to your use of the foregoing statement of fact regarding the continued use during the past five years of the stern frame welded by you. By direction. Respectfully,

(Signed) WILLIAM E. HORTON,  
Major, Quartermaster Corps, U. S. Army.

We feel confident that the above letter, the original of which we can show, is enough evidence to prove the permanency of a "Thermit Weld."

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Our Pamphlet No. 25-V and "Reactions" will interest you. Shall we send them?

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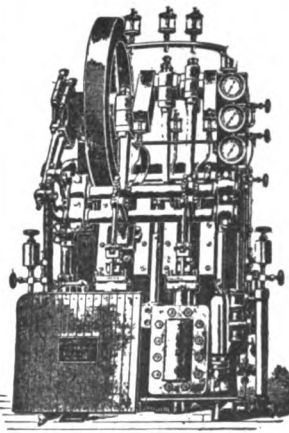
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## STEAM YACHTS

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elign trade being 24,600,000 yen, the chairman proceeded to review business in the principal lines of imports and exports.

Imports of rice into Kobe, he said, had increased by over 1,650,000 yen, while imports into Osaka showed a decrease of 1,131,000 yen. The high duties which came into force in July proved an obstacle to any large importations, but the price of Japan rice having reached an abnormally high level, the government reduced the import duty for a short time in the autumn. This had only the effect of temporarily checking the increase in the price of the local grain, and as soon as the effect of the cheaper importations had worn off, prices again began to rise and were still on the upward movement. These high prices reflected badly on the export of rice, which showed a decline of nearly 33 1-3 per cent on the figures of the previous year. The government, on account of the advanced rates, were said to be considering the advisability of again reducing the import duty this year in the hope of checking the rise, and it was reported that even then considerable contracts had been placed in Saigon and Rangoon for shipments to the Japan markets.

Imports of cotton during the year showed a decrease of about 1,800,000 yen. The high prices ruling throughout the period reflected badly on the amount which came forward. American cotton showed the most increase, helped largely by the bad crops in India and the outbreak of the Chinese rebellion, both of which led to curtailment of shipments from these countries. At the close the demand continued mostly for the American staple on account of its comparatively cheaper value.

While woollen yarns show a decrease amounting to about 580,000 yen, the value of wool imported shows a slight increase, and there was no doubt that the change in the national dress to that of foreign design had helped mills in this country to expand more in the manufacture of woollen cloths, and there was every reason to believe that a steady advance in the local production of these cloths might be anticipated. Efforts are being made on all sides to foster this trade, but still the import of worsteds and woollens showed an increase of over 600,000 yen, principally due to buying in anticipation of the new duties.

In cotton piece goods the imports generally showed no striking difference from the preceding year. Business, taking it all round, showed fair profits, the bulk of the trade having been done for arrival before the new duties came into force. In the autumn, however, the Chinese rebellion, combined with the fall in the price of cotton, brought on a general depression which lasted till the end of the year.

A decline of about 1,000,000 yen had to be reported in the import of Java sugar. This was accounted for by the strong efforts being made to develop the Formosan sugar industry, which brought prices down rapidly, though towards the end of the year increased buying set in because of the failure of the Java crop, and values consequently steadily advanced.

Exports to China in spite of the unsettled state of affairs during the latter half of the year only showed decrease of about 400,000 yen. The alteration from the conventional Chinese dress to that of European style was largely responsible for the increase in grey goods, hats, caps, etc., and there was every reason to believe that exports generally to that market would experience a marked increase once the country became more settled and a better form of government in control of affairs.

#### SUMMARY OF CROP SITUATION IN NORTHWEST.

Railroad tonnage in the Northwest resulting directly or indirectly from the big crops will be so heavy, according to a summary issued by the Charles E. Lewis Company of Minneapolis, Minn., that earnings will rise this season to record totals and the prediction is made in the summary that the Northern Pacific Railway Co. will exhibit the largest earnings in their history in the next six months.

"The largest one-way tonnage is certain because of the record crops," the report says, "and as it is an established commercial fact that only 50 per cent of the value received for crops and produce from point of distribution is returned in the form of money, the other 50 per cent being returned in the form of merchandise, farm machinery and living necessities, we assume that the return tonnage will be of large proportions."

The report gives the yields of wheat and corn in the States of Minnesota, North Dakota, South Dakota, Montana, Idaho, Washington and Oregon for 5 years past, as follows:

	Wheat Bu.	Corn Bu.
1912 .....	362,000,000	141,700,000
1911 .....	227,481,000	134,495,000
1910 .....	242,085,000	114,704,000
1909 .....	309,816,000	131,425,000
1908 .....	231,757,000	109,413,000

The table for 1912, including all of the eight principal crops, shows yields far in excess of last year in wheat, corn, oats, barley, rye, flax, potatoes and hay. The following is the complete table:

	Wheat.	Corn.
Minnesota .....	70,000,000	70,000,000
North Dakota .....	130,000,000	9,000,000
South Dakota .....	52,000,000	60,000,000
Montana .....	17,000,000	700,000
Idaho .....	17,000,000	400,000
Oregon .....	20,000,000	600,000
Washington .....	56,000,000	1,000,000
<b>Totals .....</b>	<b>362,000,000</b>	<b>141,700,000</b>
	Oats.	Flax.
Minnesota .....	100,000,000	4,500,000
North Dakota .....	75,000,000	12,000,000
South Dakota .....	50,000,000	3,500,000
Montana .....	25,000,000	6,000,000
Idaho .....	15,000,000	.....
Oregon .....	15,000,000	.....
Washington .....	13,000,000	.....
<b>Totals .....</b>	<b>293,000,000</b>	<b>26,000,000</b>
	Rye.	Barley.
Minnesota .....	6,000,000	45,000,000
South Dakota .....	500,000	25,000,000
North Dakota .....	2,000,000	30,000,000
Montana .....	300,000	1,500,000
Idaho .....	70,000	7,000,000
Oregon .....	400,000	4,500,000
Washington .....	200,000	7,000,000
<b>Totals .....</b>	<b>9,470,000</b>	<b>120,000,000</b>
	Potatoes.	Hay.
Minnesota .....	27,000,000	1,100,000
South Dakota .....	5,000,000	425,000
North Dakota .....	6,000,000	315,000
Montana .....	6,000,000	1,825,000
Idaho .....	200,000	2,000,000
Oregon .....	8,000,000	1,200,000
Washington .....	12,000,000	1,100,000
<b>Totals .....</b>	<b>64,200,000</b>	<b>7,965,000</b>

#### STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., of Pacific Marine Review, published monthly at Seattle, Washington, required by the Act of August 24, 1912.

Note.—This statement is to be made in duplicate, both copies to be delivered by the publisher to the postmaster, who will send one copy to the Third Assistant Postmaster General (Division of Classification), Washington, D. C., and retain the other in the files of the postoffice.

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Average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date of this statement. (This information is required from daily newspapers only.)

H. B. JAYNE,  
Proprietor and Managing Editor.  
(Signature of Editor, Publisher, Business Manager or Owner.)

Sworn to and subscribed before me this 17th day of October, 1912,  
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The reference to non-combustible foreign matter is understood to mean sand or mineral properties that will not burn, but will cut the engine cylinders. There are no oils produced that will not permit of taking out these sands, etc., either by precipitation or by forced straining.

Among the Diesel engine builders some raise the compression pressure and proportionately the injection pressure to create a higher temperature in the cylinders when using the heavier oils. This is not in conformance with the true Diesel principles. The purpose of creating heat by compression of air in the Diesel cylinder is to raise the temperature of the air to such a point, that the process of combustion will take place.

It may be stated that there is no petroleum residue of however heavy specific gravity, the ignition of which is not attainable by the temperature created by 30 to 35 atmospheres of compression. The combustion of the oil after ignition takes place is altogether another operation.

The complete combustion of fuel oil in the cylinders, after ignition by the temperature of the compression, is entirely dependent upon the process of handling the fuel before entering the cylinders. The period during which the oil has to be consumed is very short, in fact a small fraction of a second, therefore, the process of combustion must take place almost instantaneously. The rapidity with which the oil is consumed, does not depend upon the specified gravity of the oil used, or its chemical properties, but upon the size of the particles or globules into which the oil is broken before coming in contact with the ignition temperature. It is evident that this combustion must proceed over the surface of the particles or globules of oil injected in the cylinder, therefore, the smaller the particles the quicker consumed, due to the proportion of surface to the mass of the particles.

When using heavy residues in the Diesel without reducing the size of the particles or globules, only the surface of the particles are consumed in the short period allowed for combustion, with the result that the interior portion is converted into a pitchy substance, which deposits on the surface of cylinders, piston and valves, causing first the use of a greater volume of oil than is necessary, and second the clogging of the cylinder and valves. It is therefore conclusively shown that the oil entering the cylinder should be completely atomized or pulverized, that complete combustion of all oil injected can be effected during the very short period of approximately one tenth of the stroke of the piston.

The resultant effect of an oil used in the Diesel engine depends entirely upon its heat value, therefore, with the same units per pound an oil of .97 specific gravity will produce the same energy results from a Diesel engine as the lighter distillate of .85 specific gravity, will produce.

**THE MOTOR TORPEDO BOAT**

The gasoline power boat has recently been developed to such a high state of perfection as to speed, economy of operation, convenience and engine space that naval engineers are installing the internal combustion engine in torpedo boats. It is generally conceded that the idea of torpedo boat flotilla was that they be of comparatively light expense, contain many units of small capacity, and be provided with high speed engines, very efficient, and exposing only a small area to gun fire. The English motor torpedo boat not only operates at the high speed of twenty-

four knots and over per hour, but has a radius of action for one ton of fuel of three hundred miles.

One of the important and interesting points in connection with this torpedo boat is that the fuel tank forms no part of the structure of the hull itself. In case of damage to the hull, the gasoline will not leak into the interior, but will pass outside altogether, where it will be no menace.

The craft is designed to carry either one torpedo in a revolving tube, or two torpedoes in dropping gear at the side. It is also claimed that it can carry one ton of armament more than a steam driven torpedo boat of the same capacity, as very much less fuel is necessary. Severe tests have been made and there have been shown, according to the boats advocates, that for defense purposes a flotilla would undoubtedly be of enormous value. There is a decided advantage in being able to transport boats of this size, weighing only eight tons, either by rail or by boat with ease of great dispatch.

The boat is provided with engines of three hundred horsepower capacity. It draws twelve inches of water when at rest, so is well adapted for rivers and shallow bodies of water.

There is a small engine in the center of sixty horsepower capacity, and a starboard and port engine, each of one hundred and twenty horsepower capacity, thus giving three units of power, driving three propellers, and giving great certainty of action. The central propeller can be reversed; the other two propellers are for going ahead only. The three engines are controlled from the same board, while speed indicators are installed for showing the number of revolutions of each shaft.

Each side engine has a high tension ignition box with a single coil and an eight-point distributor. The central engine has a four-point distributor.

The gasoline tank, which is carried aft, has a carrying capacity of about two thousand pounds, which will carry the boat three hundred miles without recharging.

The English gasoline boat was designed for operation with alcohol or petrol, and although only sixty feet long with a beam of nine feet, it has developed a speed of over twenty-four knots per hour, carrying a load of three tons which is a fair allowance for the weight of fuel and torpedoes.

H. J. T.

**WRECKS, CASUALTIES AND MISCELLANEOUS REPORTS**

"NEWPORT," str. Before reported sunk at Balbao has been raised and part of the cargo discharged. As soon as she can be fitted for the voyage she will proceed to San Francisco under her own steam.

"BEAVER," str., from San Francisco Nov. 11th for Astoria and Portland encountered very heavy seas when crossing the Columbia River bar and sustained considerable damage to the saloon and cabins.

"OCEANA VANCE," schr., from Columbia River for San Diego was partially dismasted in a gale and was picked up and towed to Port Townsend by the steamer "River-side."

"STRATHDENE," Br. str., from Astoria for Calcutta was obliged to put back to Victoria in distress. Part of her deck load had been washed away by a gale.

"BEAVER," str., from San Francisco Nov. 26th for Portland went ashore on Nov. 28th about ten miles below that port. She was later assisted off by tugs after a part of the cargo had been lightered.

"COUNTY OF LINLITHGOW," Chil. Ship from Antofagasta for Royal Roads went ashore Dec. 2nd on Otter Point, Vancouver Island, but was later assisted off and towed into Esquimalt. Damage, if any, not known.

"STRATHDOW," Br. str., from San Francisco Dec. 1st for Melbourne returned to San Francisco with low pressure piston broken.



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Note—On Nov. 30, Dec. 14, 28, Jan. 11, 25, Feb. 8, 22, will omit calls at Lowe Inlet, Skeena, Nass and Granby Bay and will call at STEWART.

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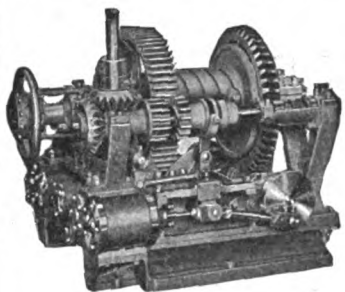
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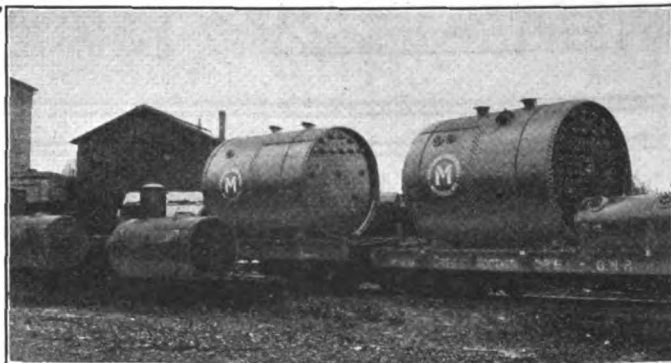
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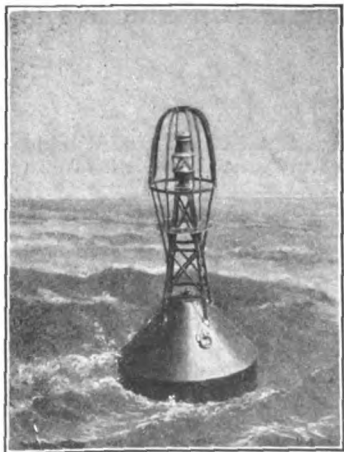
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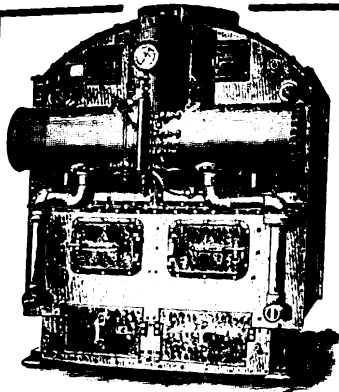
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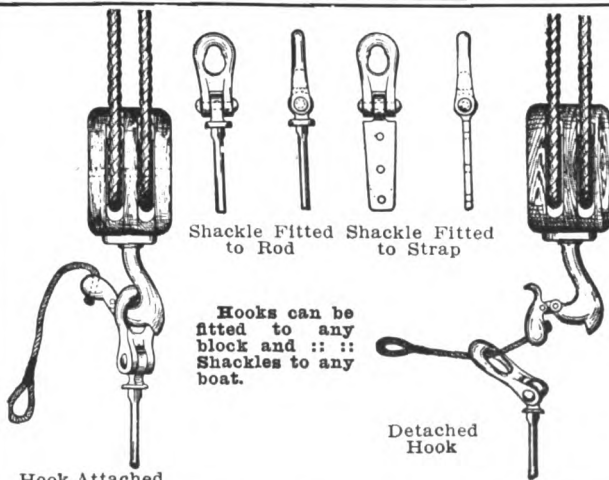
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